THE LIBRARY QVARTERLY

VOLUME 46 · OCTOBER 1976 · NUMBER 4
THE UNIVERSITY OF CHICAGO PRESS

THE LIBRARY QUARTERLY

A Journal of Investigation and Discussion in the Field of Library Science

Editorial correspondence: Editor, THE LIBRARY QUARTERLY, Graduate Library School, University of Chicago, 1100 E. 57th Street, Chicago, Illinois 60637.

Published January, April, July, and October. Subscription rates, U.S.A.: Institutions, 1 year $16.00, 2 years $28.80, 3 years $40.80; individuals, 1 year $12.00, 2 years $21.60, 3 years $30.60. Student subscription rate, U.S.A.: 1 year $9.60 (letter from professor must accompany subscription). All other countries add $1.50 for each year's subscription to cover postage. Single copy rates: institutions $4.50, individuals $3.60. Back issues available from 1962 (vol. 32). Checks should be made payable to The University of Chicago Press, 11030 S. Langley Avenue, Chicago, Illinois 60628.

Subscribers are requested to notify the Press and their local postmaster immediately of change of address, providing *both* old and new addresses. *Please allow four weeks for the change.*

Claims for missing numbers should be made to Subscription Fulfillment, University of Chicago Press, within the month following the regular month of publication. The publishers expect to supply missing numbers free only when losses have been sustained in transit and when the reserve stock will permit.

Single issues and reprinted volumes through 1961 (vols. 1–31) available from Walter J. Johnson, Inc., 355 Chestnut Street, Norwood, New Jersey 07648. Volumes available in microfilm from University Microfilms, 300 North Zeeb Road, Ann Arbor, Michigan 48106. Out of print volumes available in microfiche from J. S. Canner & Co., 49–65 Lansdowne Street, Boston, Massachusetts 02215; complete volumes available in microfiche from Johnson Associates, P.O. Box 1017, Greenwich, Connecticut 06830.

Second-class postage paid at Chicago, Illinois · PRINTED IN U.S.A.

ISSN 0024-2519.

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ISSN 0024-2519

THE LIBRARY QUARTERLY

VOLUME 46

1976

THE UNIVERSITY OF CHICAGO PRESS
CHICAGO, ILLINOIS

PUBLISHED BY THE UNIVERSITY OF CHICAGO PRESS, CHICAGO

PUBLISHED JANUARY, APRIL, JULY, OCTOBER 1976

CHICAGO, ILLINOIS, U.S.A.

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THE LIBRARY QUARTERLY

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PUBLISHERS, LIBRARIES, AND COSTS OF JOURNAL SUBSCRIPTIONS IN TIMES OF FUNDING RETRENCHMENT

Herbert S. White

A study funded by the National Science Foundation and carried out at the Indiana University Graduate Library School examined the economic interaction between libraries and publishers of scholarly and research journals for the period 1969–73. Drawing from the findings of the study, the validity of the fears of librarians of growth in the number of journals published and publishers' profits and the fears of publishers of unlimited photocopying in libraries are examined. The complex price structure of journal subscriptions, their increasing cost, and the problems these pose both to publishers and librarians are discussed. How libraries allocate their budgets is also examined, and problems requiring further investigation are identified.

In the spring of 1974 the Indiana University Graduate Library School began work, under a grant from the National Science Foundation, on a study on the interaction between the publishers of scholarly and research journals in the United States and the libraries which form their primary customer base. These libraries are largely academic, particularly major research libraries, but smaller academic libraries, special libraries, and larger public libraries are also included. It is not the purpose of this article to repeat, or even to summarize, the findings of this massive study [1]. Instead, this article will examine what the survey revealed about the total network of economic relations which tie these publishers and libraries inexorably to one another. It will examine the validity of the assumptions which each group has made about the other. It will look at some strategies either employed or contemplated by librarians and publishers to minimize anticipated or actual econom-

[*Library Quarterly*, vol. 46, no. 4, pp. 359–77]

ic difficulties and comment both on the rationale for, and success of, these strategies.

First, some delineations and disclaimers are in order. The survey was carried out under the direction of Dean Bernard Fry of the Indiana University Graduate Library School. I participated actively in the evaluation of data and in the writing of the final project report. We began by trying to establish a common meeting ground on which librarians and publishers could at least agree on the form and kinds of questions and the populations to be asked to respond in the study we proposed. We recognized that this survey required participation in both the formulation and evaluation phases from a broad range of interests, including commercial, society, university, and miscellaneous nonprofit publishers and academic, public, and special libraries. The study also required contributions from economists and statisticians, as well as from representatives of those sectors of the governmental community concerned with the formulation of policy.

Definitions of periodicals for inclusion and exclusion are described in some detail in the final project report. Periodicals produced by countries other than the United States were not included, not because they were unimportant, but because they are a major group with different characteristics which require a separate study. A group of 2,459 periodicals was identified as U.S. scholarly and research journals, a group smaller than earlier estimates [2] because of the more stringent criteria used to determine membership. Approximately half of these periodicals were then selected for inclusion in the survey.

We anticipated that, because of the length and complexity of the questionnaire, publishers were unlikely to respond as well as libraries. We further anticipated that commercial publishers would be particularly reluctant to participate because of concern about disclosure of proprietary financial data, despite the use of an intermediary to process all responses. The techniques developed were designed to minimize these problems and to ensure that no individual publisher was asked to complete an inordinate number of three-hour questionnaires. The procedures were as follows: (1) Of all publishers publishing only one journal, half of those in each category of publisher except commercial publishers were randomly selected. All commercial publishers of only one journal were included. (2) For all publishers publishing more than one journal, half of each publisher's journals were randomly selected. However, no publisher was asked to respond to more than ten questionnaires even if, as in one or two cases, he published more than twenty journals.

Despite all of these precautions, the rate of response from publishers was disappointing, ranging from almost 50 percent for university presses to 14 percent for commercial publishers. Not all lack of response was caused by reluctance to participate. In many instances organizations were simply unable to supply requested information.

The response rates from larger academic and special libraries, those most

directly affected by the economic structure of scholarly and research periodicals publishing, ranged between 50 percent and 70 percent of the sample population. This rate was achieved despite the necessity of a rather formidable, lengthy, and complex questionnaire, which took several hours to complete. It seems clear that the high level of participation is indicative of a high level of interest and concern.

The data and conclusions are clearly limited by the fact that the survey encompasses only the years 1969–73. While much information was obtained for this time period and many trends could be seen, the survey stops short at the very time when pressure on library budgets, decreases in government subsidies, and the rate of domestic inflation were just beginning to reach their peak. The absence of information concerning the pivotal years of 1974 and 1975, in particular, only serves to accent the significance of conclusions which can already be drawn from the earlier data, since there can be little doubt that many of the problems already evident in 1973 have since been exacerbated.

The Rate of Growth of Scholarly and Research Journal Literature

There has been considerable speculation among librarians, publishers, and government officials concerning the rate of growth of the published research literature. These speculations, based on fragmentary data, have ranged from projections of zero growth [2] to rates as high as 8 percent per year [3], a rate which would cause a doubling approximately every nine years. Concern about this assumed rate of growth among librarians and others has been so great that suggestions have been made [4] that libraries refuse to purchase newly published journals in order to force publishers to limit their output. It appears clear, however, that most new journals arise from the needs of scholars and researchers to communicate the results of their research and the needs of others to learn about that research rather than from some preconceived notion by publishers that new journals in particular fields must be issued.

The results of this study would indicate that, at least during the years 1969–73, the growth in publication of new American scholarly and research journals was not as rapid as many librarians had supposed. Of the 2,459 journals identified in 1973, 403, or 16.4 percent, did not exist in 1969; this suggests a gross annual growth rate of approximately 3.9 percent. *Ulrich's International Periodicals Directory* indicates that 200 scholarly and research American journals ceased publication between 1969 and 1973. The net annual rate of growth, therefore, approximates 2 percent, a figure considered neither alarming nor abnormal when compared to growth in research, particularly academic research, during the same time period. It is possible and even likely that foreign scholarly and research journals grew at a more rapid net rate. Since American libraries appear far more willing to cancel foreign titles

which receive little use or are available through networks or consortia, even this problem may not have the dimensions attributed to it.

The publication rate of new journals in the commercial sector was double that of the overall average and approximated 8 percent a year, compared with an annual rate of less than 2 percent for journals published by societies and university presses. The 200 journals which ceased publication during 1969 and 1973 were not categorized by publisher, but I suspect that a correspondingly large percentage of commercial publications were represented. Commercial publishers, guided by a profit motive, can be expected to take risks. At the same time, they are probably also more willing, for the same motivation, to cease publication of a journal which is not economically viable. Other publisher groups, particularly university presses and small not-for-profit publishers, are known from the survey data to go to great lengths to keep economically unviable publications alive, frequently through transfers of funds and direct subsidies. Such publications, which might be expected to disappear in a laissez-faire economic environment, struggle to stay alive for reasons involving perceived professional responsibility rather than economic gain.

The Rate of Price Increases for American Scholarly and Research Journals

Studies of price increases, as compiled by various universities, subscription agencies [5], and even publisher groups, already abound, and this survey adds only more specific data, although perhaps significant in its specific orientation to American scholarly and research journals.

During the period 1969–73 the American publishers represented in the survey increased publication prices at an annual rate of between 7.5 percent and 9.8 percent per year, with the small not-for-profit publishers at the low end and commercial publishers at the high end of the spectrum. University presses fell roughly in between, with annual increases of 8.7 percent, while professional societies at 9.4 percent come close to the commercial publishers' rate.

These statistics are consistently less than the average annual periodical price increases reported by the libraries in the survey. Academic libraries reported an annual price increase for all periodical titles of 11.2 percent, while special libraries reported an annual rate of 12.4 percent. There are several possible explanations for the difference. First of all, it must be recognized that the responding libraries were commenting on all periodical subscriptions, including such nonscholarly publications (as defined in the survey) as newsletters, general and popular publications, translations, and publications generally not covered by abstracting and indexing services. These may have increased their prices at a greater rate, although we do not know.

Second, it must be noted that the price changes in foreign periodicals, not included in the data provided by publishers, could not be separated out in the

responses from libraries. There is a considerable amount of evidence to suggest that, during the period 1969–73, the price of foreign periodicals increased more rapidly than that of domestic publications. This may be true, in part, because of greater inflation rates in many other countries than in the United States, and also because the general weakening of the dollar increased prices in terms of rates of international currency exchange. Finally, it must be pointed out that the prices reported by libraries usually include the charges of subscription agencies, while publishers' price rates do not. Service charges applied by subscription agencies have increased sharply over the last several years, from what was a discount from list price not many years ago to present service charges ranging from 4 percent to 10 percent and more. Furthermore, some subscription agents impose other, less obvious, costs, such as handling charges for address changes and currency conversion hedges of as much as 10 percent for foreign periodical titles. All of these factors would be represented in the periodical prices reported by libraries, but not in the price reported by publishers. It must be recognized that the relatively sharp price inflation seen in subscription-agency activity has been caused in large part by decreases in discounts offered to these agents by publishers, and this reduced discount becomes, in effect, a hidden price increase passed along to the ultimate library purchaser. It is unfortunate that the role of the subscription agent in the economics of the journal publication system has not been adequately explored, particularly since this role appears to be having an increasing economic impact and since substantial differences in practice between various subscription agents exist.

Despite the general unhappiness in the library sector with the rate at which periodical subscription prices have been increasing (certainly as contrasted to changes in their own budgets), there is no evidence to suggest that this has resulted in the accumulation of large profits in the commercial sector or operating surpluses in the noncommercial group. With operating income defined as revenue minus costs of sales and operating expenses but excluding such items as interest paid or received, capital expenditures, and taxes, both university presses and the small not-for-profit publishers show deficits which, for the period 1969–73, are not only consistent but increasing. By 1973 both groups had annual operating deficits in excess of 6 percent of income. This problem can be hidden for a while by the fact that periodicals customers, unlike book purchasers, pay for subscriptions before the issues subscribed for are produced and before costs are incurred. But this is a situation which ultimately can be resolved only by the death of the publication, increased subsidization by the sponsoring body, substantial increases in circulation, or even greater price increases. Increased prices can, of course, have a negative impact in turn on circulation, and the resulting spiral of increasing prices followed by decreasing customers followed by increasing prices, ad infinitum, will be recognized by those with some familiarity with what has happened to urban public transportation systems.

Publications of professional societies, which report an operating surplus of

about 3 percent in most of the reporting years, appear to have kept pace with their cash requirements. Like other not-for-profit organizations, societies obviously yield no return to investors or stockholders. A 3 percent surplus can be considered only marginally sufficient to meet capital expenditures such as new equipment or facilities or to provide operating capital to permit the start of new projects and their sustenance until they can reach financial stability.

Commercial publishers of scholarly and research journals, however, report an operating profit, which increased from 11.3 percent in 1969 to 14.1 percent in 1973. That commercial publishers make a profit cannot be surprising, since the financial pressures under which for-profit organizations operate tend to be self-purging in nature. Inefficient or unlucky entrepreneurs who are not successful tend to drop out, although new candidates are frequently found to take their place.

Although the sentiment of some librarians may be against the principle of publication of scholarly and research journals for profit, the achievement of a 14.1 percent operating profit by a commercial organization cannot be considered exorbitant or, for that matter, even impressive. The low esteem in which publishing stocks have traditionally been held on the stock market is ample evidence of this. It must be recognized, too, that, in addition to extraordinary expenses such as interest, the remaining profit is then subjected to a 50 percent federal income tax, in addition to various state and local taxes. It is highly unlikely, therefore, that from an operating profit of 14.1 percent, more than 4 percent or perhaps 5 percent would remain for reinvestment or distribution to owners or stockholders. When this is compared to the 8 percent which money can earn in safe tax-free bonds, the operating profit seems even less attractive. It can, in fact, be argued that the return of $104 in one year for $100 expended in a previous year represents no return at all because of inflation, which dilutes the dollar's purchasing power in the interim.

It is clear that, for the scholarly and research publishing community as a whole and for the commercial sector in particular, whatever the reasons for increases in journal prices, large profits are not among them.

Pricing Strategies Which Discriminate against Libraries

Many librarians have maintained that they are the victims of discriminatory pricing stratagems, under which they are asked to subsidize lower subscription rates charged to individual subscribers. This is considered to be particularly true in the case of subscription rates for individual members in professional societies. The charge, as evidenced by the data from this study, is not without foundation. Some publishers, however, would argue that libraries should pay higher rates, since their copies are used by many individuals and the cost, therefore, can be amortized over a number of users. Although this is often posed as a moral issue, the statistics of this study indicate that the

publisher's decision to charge libraries more than individuals is based on economic rather than moral considerations. Apparently these are so compelling that the discrepancy between individual and institutional subscription rates is increasing.

An increase in the number of customers is the major alternative to an increase in prices and is, for most publishers, the course they prefer in attempting to raise additional revenue. By and large, however, the publishers of scholarly and research journals have been unsuccessful in significantly broadening the total subscriber base, even allowing for growth in foreign subscriptions. Neither commercial not society publishers were able to increase domestic subscribers at a rate of more than 1 percent per year during the period under investigation. The 2.2 percent annual growth in subscriptions to journals from university presses was caused by increased foreign subscription. By 1973, foreign subscriptions represented 44.1 percent of all the subscriptions of commercial publishers, and, while the percentages were considerably smaller for other publisher groups, they also showed substantial growth in foreign subscribers. This increase was essential because American commercial, society, and university publishers all had overall decreases in domestic subscriptions in the period 1969–73. Without exception, this decrease was caused primarily by drastic reductions in individual subscriptions, ranging from 2.7 percent for the commercial sector to 12.9 percent for university presses, with society journals at 4.0 percent. Increases in institutional subscriptions, usually libraries, were unspectacular but steady. From this information it appears, as it must have appeared to publishers, that even with the difficulty which libraries have had in meeting increases in periodical prices, the difficulty for individual subscribers, supported either by grants or their own checkbooks, was even greater.

Reaction to this problem of differential subscription rates by the publishing community is scattered and appears confused, probably representing uncertainty concerning appropriate strategies. Some publishers charge single rates to all subscribers and perceive this either as the most equitable or as the most practical pricing structure. Other publishers have a variety of intricate pricing structures including library rates, individual subscriber rates, student rates, and sometimes even student subscriber rates. Those publishers who had already differentiated between library and individual subscription rates tended during the period 1969–73 to increase this differentiation. In general, commercial publishers appear to be moving away from a structure of differential rates toward a single rate. While 67 percent of the commercial publishers surveyed had different rates in 1969, only 56 percent retained them in 1973. By contrast, both society and university publishers, who already were more likely to charge differential rates by which libraries pay more than other kinds of subscribers, increased this practice during this period; 76 percent of society publishers and 65 percent of university publishers had different price rates by 1973.

Publishers who charge differential prices have been increasing the gap between institutional and individual subscription rates. Librarians, therefore, can argue that they are in fact subsidizing unrealistically low individual subscriber prices. Publishers undoubtedly tend to counter by saying that price differentiation is necessary to protect what little remains of a personal subscription base. Without this, library prices would have to be set still higher. They also tend to argue that there is at least some suspicion that cancellation in individual subscriptions is accelerated by the availability to the library user of expanded interlibrary loan through networks, consortia, and photocopying.

The increased differentiation between library and individual rates for publishers who differentiate is marked for all publisher groups. In 1969 the median library price for commercial publications with different price structures was 165 percent of the individual subscriber price. By 1973 it had grown to 172 percent. The change was from 135 percent to 137 percent for society publications and from 133 percent for publications issued by university presses to 150 percent. The smaller not-for-profit publications exhibited an even greater increase, from 106 percent to 145 percent.

The charge that libraries are increasingly being asked to bear a larger share of the subscription price than in the past appears to be true. Librarians argue that they are being singled out because they are largely a captive market with little ability to make competitive decisions. Publishers respond that librarians are singled out to shoulder increased prices because, despite their poverty, they are still the most affluent group of subscribers available.

Prices Charged by Commercial Publishers and Those Charged by Other Publisher Groups

Librarians have tended to believe that commercial publishers of scholarly and research journals charge the highest prices. The survey indicates that, without question, this is true. The reasons for this, however, are not obvious. In 1973 median prices charged libraries by commercial publishers were 168 percent of the prices charged by society publishers, 181 percent of those charged by university presses, and 253 percent of those charged by other not-for-profit publishers.

There are several possible explanations for these higher prices in addition to that of profit motivation. Commercial publishers are less eligible for subsidy than the other groups of publishers in the survey, and are generally ineligible for government-paid page charges, although it must be added that neither subsidies nor page charges provide much revenue for any group. The higher prices charged by commercial publishers are also a function of the higher prices generally charged for journals in the pure and applied sciences, as compared to the humanities and social sciences. The median pure science

journal, regardless of publisher, is sold at twice the price of a social science journal and at almost three times the price of a humanities journal. Applied science journals are also more than twice as expensive as humanities journals. Commercial publishers are most active in the pure and applied sciences. Whether pure science journals cost more because commercial publishers put them out, or whether commercial publishers are forced to charge more because pure science journals cost more to issue (because of composition costs for diagrams and formulas, for example) is difficult to ascertain.

More significant, in my view, is the fact that commercial publishers publish larger journals. When price per page is used as the basis of comparison, commercial prices, while still higher than those of other groups, appear more realistic. The page price of commercial journals is 117 percent of the page price of society journals, 182 percent of those issued by university presses, and 122 percent of those of other not-for-profit publishers. University presses continue to charge the lowest prices per page. Perhaps not coincidentally, university presses are also shown from earlier data to be in serious financial difficulty.

What Libraries Are Doing about the Problem

Although the problem of acquiring materials for libraries has many ramifications, at least that part of the problem concerned with the obtaining of scholarly and research journals published in the United States can be quantified in a relatively simple way. In order to maintain an equivalent position over time, libraries would have to be able to afford the price increases of existing journals and also absorb the estimated 2 percent net growth in the literature that has been reported above; for example, on the basis of our survey data, academic libraries would have to spend an additional 13.4 percent of their serials budget, and special libraries would have to increase expenditure by 14.6 percent. This approach ignores the impact of the cost of foreign publications, the prices of which I suspect are rising more rapidly than domestic journal prices. It also ignores the responsibility of both academic and special librarians to expand journal holdings as specialized subject areas become increasingly interrelated and as fields once considered peripheral become more important and even crucial to their users. Nevertheless, it can be argued that during the period from 1969 to 1973 an annual increase in expenditure of 13.4 percent per annum for academic libraries and of 14.6 percent for special libraries would allow them to maintain their position with respect to the number of scholarly and research journals to which they subscribe.

Survey returns indicate that the total budgets of large academic libraries increased at an annual rate of 8 percent during the years 1969–73. Small academic libraries fared considerably worse, with an annual growth rate of only 5 percent. Special libraries, by and large, had budget increases at an

annual rate of 10 percent for small special libraries and 13 percent for large ones. None of these library groups (public libraries simply do not spend enough of their budgets on scholarly and research journals to be heavily affected) had budget increases proportional to the increased cost of subscriptions to scholarly and research journals during the period from 1969 to 1973. It should be noted that the years 1969–73 are still considered by many library administrators as "good" years, at least relatively good compared to what has followed.

The 1969–73 budgetary picture for academic libraries is even more bleak than is apparent from the data presented. In large academic libraries, while the overall budget rose by an annual 8 percent, salary budgets rose by 9.5 percent. Staff costs in smaller academic libraries rose 6.5 percent. In 1969 the figure for labor costs was about 54 percent of the budget of small academic libraries and 57 percent of that of large academic libraries; in 1973 it was a remarkably consistent 59 percent of the budget of both large and small academic libraries. While costs generally classified as "other" (equipment, supplies, miscellaneous expenditures) do not require a large overall portion of the library budget, even these costs showed a percentage growth.

There was, therefore, a decrease in the percentage of the library budget available for the acquistion of materials. This decrease ranged from almost 3 percent in large academic libraries to almost 4.5 percent in small academic libraries. As shown above, this was at a time when even the maintenance of the same percentage of the budget would have been insufficient to maintain the same level of periodical subscriptions.

Materials budgets in libraries, as defined by our survey, consist of three categories: books, serials, and "other" (this contains such items as audiovisual materials and microforms, for example). As a percentage budget allocation this last category is so small (about 0.1 percent of the overall academic library budget and less than 0.5 percent of the materials budget) as to be insignificant in strategic decisions. The most significant and dramatic shift revealed by the 1969–73 survey data was the transfer of funds from the book to the serials budget.[1] Since it is known from the experience of subscription agencies that there is a parallel trend of shifting nonperiodical serials into the book budget to permit an easier annual review of purchase decisions, it can be assumed that the transfer from the book budget is primarily, if not exclusively, for the purchase of periodicals in an attempt to maintain and even expand library holdings, despite the budgetary difficulties.

Despite the decrease in the percentage of their budgets expended on all materials, a large proportion of academic libraries in the survey increased

1. It is unfortunate that the term serial, which includes both periodical and nonperiodical material, had to be introduced for purposes of budgetary comparisons. Responding libraries were asked to differentiate between periodical and other serial expenditures, but to a large extent they were unable to do so.

substantially the percentage of the total budget spent on serial publications: 12 percent in 1969 to 15.5 percent in 1973. This is a 29 percent increase in a four-year period. I suggest that, for the years 1969 through 1973, large academic libraries not only maintained the existing level of their serial holdings despite price increases, but that they also managed to absorb the estimated 2 percent net growth in the literature.

This was accomplished at a price, and that price was a drastic reduction in the level of acquisition for books. The percentage of the total budget for book purchase in large academic libraries dropped in the four-year span from 24.3 percent to 18.1 percent, a decrease in level of expenditure of 25.5 percent. When this decrease is interpreted in light of what is already known of book price increases [6], the effective decrease in level of spending becomes even greater. Stated in different terms, it can be shown that in 1969 large academic libraries were spending more than two dollars on books for each dollar spent on serials. By 1973, this had dropped to $1.16 for books for each dollar spent on serials, and it is probable that 1975 data would show that the order of the two categories has been reversed. Small academic libraries, which, according to the survey data, have historically spent far more on books than on serials, show the same trend, although the proportions are different. In 1969, small academic librâries were spending $4.60 on books for each dollar spent on serials. By 1973 this was down to $2.70.

Both publishers and librarians who have been privy to the analysis of these data agree that this trend is highly disturbing. It can be shown that, even at the 1969–73 rate (and there is evidence for assuming an acceleration in the rate), by the late 1980s large academic libraries will have ceased to purchase books entirely; all of their materials budget will be expended on serials. Such projections, of course, are only useful as an exercise and for their shock value. First of all, little can be said at this stage about either library budgets or materials prices in the late 1980s. Second, the percentage of materials dollars spent on books must, at some point, reach an irreducible minimum, although no one can predict with any level of confidence what that will be. When this occurs the full impact of budget constraints will hit the library periodicals budget if, indeed, this has not already happened in the time elapsed, since the 1973 cutoff date of this survey. The expedient of shifting dollars from the book to the serials budget to avoid difficult decisions about discontinuing periodical subscriptions was and is temporary. Sooner or later academic libraries must make these decisions about what subscriptions to place, what subscriptions to keep, and what subscriptions to cancel.

Factors Affecting Decisions about Library Periodicals

Academic librarians tend to attempt to maintain continuity of periodical runs by retaining subscriptions already in effect, even at the cost of severely

curtailing the addition of new titles. From everything known about the half-life of information use and the application of Bradford distribution [7, 8], this attitude would tend to confirm the findings of Wasserman and Bundy [9] that the value system of academic librarians tends to rate completeness and continuity of collection above actual information use. Academic libraries were still successful in the period 1969–73 in adding periodical subscriptions at a more rapid rate than the rate at which subscriptions were canceled, although the ratio of new subscription to cancellations declined sharply. In 1969 large academic libraries were adding forty-seven titles for each title canceled; by 1973 this ratio had fallen to 7.3:1. By the same token, in 1969 academic libraries were canceling existing subscriptions at a trivial 0.2 percent of their collections, giving credence to the belief that, until budgets became tight, subscriptions once placed were generally automatically renewed without evaluation. By 1973 the cancellation rate had more than tripled, but even a 0.7 percent rate of cancellation indicates little in the way of continuous evaluation or analysis.

The impact on the ordering of new titles (at least of titles not previously held) during the period 1969–73 was far more severe. In 1969 the percentage of new titles ordered in large academic libraries as related to the collection as a whole was 9.4 percent. By 1973 this had dropped to 5.1 percent, without any comparable indication that there were fewer new or worthwhile periodicals among which to choose. Stated another way, confronted by the choice of canceling an existing subscription or not placing a new one, large academic libraries opted to forgo a new order forty-three times for every five times they decided to cancel an existing subscription, a ratio of better than 8:1.

During the period 1969–73, large special libraries, on the other hand, actually increased subscriptions to new titles as a percentage of the collection, and by 1973 were doing so at a greater rate than large academic libraries. Moreover, special libraries, which in 1969 canceled titles at a rate more than three times that of large academic libraries as a percentage of the collection, continued to do so at a rate almost twice that reported by academic libraries in 1973, the year in which they canceled the most subscriptions. It would seem, from the above, that special libraries are far more willing or able critically to evaluate and weed their periodical collections and make room for new subscriptions by cancellation of duplicate subscriptions or titles no longer judged important enough to be retained. This is particularly significant, because there is every indication that the ability to decide what to do without while at the same time maintaining as much as possible of the value of a collection will develop rapidly into a new and highly sought after skill [10].

It might be assumed that when librarians make cancellation decisions, they do so in large part on the basis of their knowledge of the availability of titles through consortia and networks. In fact, network boosters [11] have claimed this to be so, while publishers have feared and decried it. The survey information suggests that, at least through 1973, such rationalizations by academic librarians are infrequent. While this may change and may already have changed, in 1973 the priorities for developing and maintaining the integrity

of the overall collection were simply too strong. In large academic libraries the elimination of duplicate subscriptions, despite the fact that there was not much duplication of titles to begin with, was the strongest factor in cancellation decisions. In 1969 the incidence of duplicates (or triplicates or more) in the entire collection of large academic libraries was 4.9 percent; by 1973 this had decreased to 3.0 percent, a drop of 39 percent. This offers further credence to the belief that, as a priority, integrity of collection exceeds optimization of use, particularly since other studies tell us [7, 12] that the greatest incidence of interlibrary loan is of titles which the borrower already owns but cannot locate in response to a request. In small academic libraries, which are not likely to have branch collections, the tendency to have no more than one subscription of any title is even more pronounced. The incidence of duplication is consistently less than 1 percent, and in many cases as low as 0.2 percent. For these libraries an irreducible minimum appears to have been reached, and whatever duplication exists continues and may even increase slightly. Large academic libraries appear to accept, whether willingly or grudgingly, the concept that one copy on the campus is sufficient for access, whether or not this is, in fact, realistic on a large and scattered campus, for example.

In cancellation decisions there is also a noticeable tendency to cancel foreign titles, particularly those in languages other than English, in preference to domestic titles. Whether this is because these titles are thought to be less significant, are used less because of language difficulties, or cost more than domestic periodicals was not ascertained.

Increases in prices for specific periodical titles appear to play a small and relatively unimportant role in decisions to cancel or retain them. In large academic libraries the mean price of canceled titles exceeded that of retained titles by only 13.6 percent, a significant but certainly not dramatic difference. When academic libraries do cancel subscriptions, they tend, perhaps paradoxically, to cancel in subject disciplines in which the subscription price is generally lower to begin with. The subscription price of canceled social science journals exceeds that of those retained in the same discipline by a price differential of 24.8 percent; the difference for humanities journals is 22.0 percent. By contrast, for pure science journals, by far the most expensive as a discipline group, the price of canceled titles exceeds that of those retained by only 1.2 percent. Publishers who insist that quality journals tend to survive in libraries whether or not they have increased their price may be correct. In fact, it can be surmised that periodicals which have not increased in price at all may be canceled to provide funds to meet the increased price of important publications.

Validity of a Publication Laissez-Faire System

The discussion so far may seem to suggest that a totally laissez-faire system under which quality publications survive and marginal or substandard peri-

odicals die a natural death is desirable. This has been suggested by some librarians and even by some publishers who obviously believe that their journals are of sufficiently high quality to survive. While such an approach has the attractions of being clean-cut and simple, it is rather simplistic. The fact that university presses and small not-for-profit publishers as groups are less and less viable economically, in that they have increasing annual deficits, has already been reported. Their financial position may sometimes be the result of the poor quality of a publication, but more frequently it results from the fact that the publication, while perhaps unique and important, is addressed to a small and specialized reader population. In addition, small publishers such as these usually have neither the marketing expertise nor advertising dollars to attempt to reach a worldwide market. A major factor in the marked differentiation which exists between commercial and noncommercial publishers in tapping foreign markets may well be the commercial publisher's ability to mount extensive market-penetration programs. Such programs normally require both overseas advertising and the employment of local sales representatives abroad, and are expensive. While university publishers in particular are increasing their share of the foreign market, that share is still quite small.

Of perhaps even greater concern is the uncertain support entire subject disciplines would be able to provide for journals published under a laissez-faire system. Journals published in the applied science and technology disciplines are the only ones demonstrating continuing operating surpluses or profits. Pure and social science journals hover at the break-even point, while publications in the humanities consistently and increasingly report operating deficits across the disciplines which comprise them. Clearly, a system without subsidies or other buttressing devices would have devastating consequences for research and scholarship in the humanities and could even lead to the demise of all journal publication in certain humanistic specializations. It seems unthinkable that something like this should be allowed to happen.

Consortia, Networks, Interlibrary Loan, and Photocopying

Publishers, whose economic position has been shown above not to be particularly strong, have been understandably concerned about the rise of photocopying, particularly as this is facilitated by organized networks of libraries. They are also concerned that such networks or consortia have an impact on library purchasing decisions, particularly since some consortia claim as a benefit for their members the possibility of reduced purchasing.

In previous sections of this paper I have commented on the lack of evidence from this survey that the existence of networks and consortia has much impact on a library's decision concerning the level of its funding for periodical subscriptions. There is a similar lack of evidence concerning interlibrary loan and photocopying.

There is no doubt that within the survey period we were experiencing dramatic increases in interlibrary borrowing and lending of periodicals at all levels. Large academic libraries, traditionally large-scale lenders, were also becoming borrowers on a greater scale. It is not clear that the titles being borrowed were those the library did not in fact own. Other studies [12] have suggested that borrowing is frequently prompted by an inability to locate a copy which the library does own. If this is true, the reported elimination of duplicates for frequently used titles could spur interlibrary loan to an even greater extent than the elimination of single copies.

In the survey, libraries were unable or unwilling to differentiate between interlibrary loan of an original article in loose or bound form or the supply of a photocopy. The distinction does not seem significant to me. Libraries lend the original document because this has a real or perceived convenience for the lender. There may be a truck service which avoids mailing costs; there may be no copying equipment, or it may have broken down. The survey did not provide for any indication, in these instances, if the borrowing library made a photocopy before returning the borrowed material. I have observed that this practice is followed in virtually all cases in which the material is found to be useful, and even in some when it is not. Many libraries are unwilling to entrust a valuable bound volume which belongs to another organization to an internal user and will, as a matter of policy, make a photocopy to give the requester.

Despite the undoubted increase in interlibrary periodical lending, and given the probability that many libraries consult holdings lists of neighboring libraries or of other members of consortia and networks before making decisions as to which periodicals to retain and which to cancel, there is still no evidence that all of these practices affect, in any significant way, the totality of the library–journal publisher relationship. This assertion is based on the evidence, as presented earlier, that libraries are already doing everything possible, and perhaps more than may be reasonable, to make dollars available from their meager budgets for the purchase of periodicals. It is a highly doubtful proposition that the elimination of networks or the imposition of photocopying charges paid from library funds would do anything other than simply increase the competition for fixed quantities of dollars and accelerate decisions about which titles to cancel and which titles not to add. There is no doubt that the present availability, through consortia and interlibrary loan, of photocopies of periodical articles can damage specific publishers, and in some cases perhaps cost them a great deal in lost revenues. However, this problem is one of revenue allocation and distribution among publishers rather than one of increasing total sales dollars for publishing as a whole.

No argument is raised here that, for this reason, photocopy charges should not be imposed. The question is at this moment before Congress. However, without a broadening of the funding base to include the ultimate user's own budget in both academic and public libraries, or without some outside support through a subsidy mechanism, little will be gained on an overall basis by

the publishers' success in imposing controls and charges. In most special libraries, of course, the alternative of charging the ultimate user becomes meaningless, since such libraries, particularly libraries operated in the for-profit sector, are usually supported out of corporate overhead allocations. Unless the imposition of charges is paralleled by increased budgets for special libraries and either increased budgets or outside user charges in academic and public libraries, publishers will have gained little if any advantage. Most publishers with whom I have talked agree with this analysis.

Attempts to Alleviate Economic Pressure

Publisher Community

The survey attempted to elicit information from both publishers and librarians concerning actions either being taken or being contemplated to alleviate the economic problems of which both groups are clearly aware. Responses from both groups, unfortunately, were more rhetorical than substantive.

Publishers perceive little alternative to reliance on subscription income for the support of their publications. Neither advertising revenue nor page charges is a major source of funds. Advertising revenues, together with subsidies, have never been significant and are in fact declining as a percentage source of funds. Publishers resort to page charges with reluctance and hesitation, in part because they are keenly aware of the danger of losing significant articles to rival publications. The reliance on subscription income, which represents more than 80 percent of the revenue of commercial and university publishers and represents a smaller percentage for society publishers only because part of membership dues are transferred to the support of societal journals, is increasing for all publisher groups. Increased subscription income can come from only two sources: more customers and higher prices. Publishers obviously prefer the former, but largely they end up with the latter.

In addition, publishers see little prospect that new technologies or publishing practices will ease their financial pressures. On the contrary, they are disturbed by increases in the cost of paper and other raw materials and by imposed or threatened increases in postal rates. Publishers respond without enthusiasm to microform publication, publication of abstracts in lieu of full articles, or publication on demand. They see as their biggest source of potential support the development of spin-off publications from existing machine-processable data bases. Since such additional spin-off publications will only result in greater competition for the library's purchasing dollar, there is no potential benefit for libraries in this development.

Library Community

Little emerges from responses of librarians in the survey to cause optimism about the identification of significant solutions for their financial problems. As shown, labor costs, already the predominant category of expenses in all types of libraries, are taking a still increasing share of library budgets, leaving smaller percentages of budgets already inadequate to cope with materials costs. Nor is there any indication that the increase in personnel costs is brought about by an upgrading of existing user services or by the implementation of new ones. This is particularly true for academic libraries, which have been shown to be under the greatest financial pressure during this survey period and to be preoccupied primarily with maintenance of the status quo.

Many of the responding libraries pointed to technical services as potentially the most important area for cooperative activities and cost reduction. Pooled or shared acquisitions and cataloging operations and the use of centralized services such as the Ohio College Library Center (OCLC) were all mentioned frequently. However, while respondents extolled the potential benefits of such activities, they rarely indicated any specific commitment to cost reductions by reducing staff levels. Rather, they claimed such benefits as the avoidance of the need for increased staff and the reduction of backlogs. Since it is unlikely that, in such financially difficult times, staff size would have been allowed to increase in any case, the savings in terms of personnel cost tend to become hypothetical. However, it appears clear that a reversal of the trend of allocating larger percentages of library budgets for the labor cost of ongoing services will only be possible if libraries find ways to operate with smaller staffs—not smaller than they would like to have, but smaller than they presently have. Cooperation or shared technical services at least offer this potential.

It may be that the 1973 cutoff date of the survey was not late enough to identify specific savings which have become possible through the implementation of cooperative or shared technical services. It may even be possible, despite evidence to the contrary, that since 1973 networks and consortia have caused a reduction in expenditures for library materials. It can only be stated here that not only had these reductions not occurred by 1973, but respondents gave little indication of expecting them to occur in the near future.

The ambivalent attitude toward automation is indicative. A significant number of librarians pointed to automation as an area in which cost reduction had been achieved and as one in which more was possible. However, while some respondents talked of cost reduction by means of the implementation of automation techniques, others projected savings through the elimination of machine processing.

There is some evidence, but not much, that some attitudes about the need for binding are changing. However, they are expressed most frequently in terms of the marginal economy of acquiring microforms as second copies in

lieu of binding for retention and not in terms of the use of microforms as an initial substitute for a full-size current subscription.

Conclusions

While the shortcomings of a study limited to American scholarly and research journals and ending in 1973 prior to a period of serious economic dislocations have already been pointed out, the study does permit major conclusions. It is no longer viable to consider the increasingly unstable interrelationships of American research publishers and American research libraries as a closed system. The difficulties of their relationships are not the result of unreasonable behavior or practice by either the publishing or library communities, although both can perhaps be criticized for a lack of imagination in confronting their problems. Unless new attitudes toward the need to publish in formal refereed formats are adopted, little can be expected except an exacerbation of the present problems. In fact, there is evidence of a series of spiraling economic disasters which accelerate by feeding on themselves. Thus, as the relative purchasing power of libraries decreases and subscriptions are discontinued, journal prices are raised to offset falling revenues and the process starts anew. The "new attitudes" referred to above, which would allow for research disclosure through abstracts and summaries, flash publication, or publication on demand, would require that such techniques be accepted for research "credit" in the academic and research community. These matters have been discussed for many years, but there is no indication that any change is likely to be forthcoming. Unless they are accepted by researchers, neither publishers nor librarians can proceed very far with them.

The alternatives presently envisaged to the economic dilemma do not appear to be of much help. A laissez-faire approach to publication survival would lead to a thinning of the ranks, but not necessarily one in which only marginal journals would disappear and communication remain largely unaffected. The present approach in academic libraries, concentrating as it does on the elimination of duplicates, preserves collection integrity only temporarily, while immediately undermining access and use of material in heavy demand.

The shift of dollars from books to periodicals reported in the survey has almost certainly had a drastic impact on the publishing of books intended for purchase by academic and other research libraries, although this was not investigated in the study. In any case, such a shift can only provide a temporary solution in freeing dollars for the purchase of periodicals.

It is unlikely that a drastic change will occur in academia concerning the importance of scholarly and research publications. It is equally unlikely that libraries will receive increased funding or that there will be a dramatic breakthrough in publishing technology. My conclusion, therefore, is that the entire

system will need to be subsidized, most probably at the federal level. My colleagues and I were not particularly disturbed by this conclusion, since the research process which leads to publication is already heavily subsidized. To provide financial incentives for the completion of research, but to stop short of enabling the researcher adequately to report and disseminate his findings, appears to be inconsistent and even foolish. What remains for intensive study and evaluation by appropriate bodies is the amount of subsidy required and to whom it should be granted. Alternatives are to help the author to meet page charges, to provide the publisher with direct subsidy, to assist the library in the purchase of publications whose price reflects interplay of normal economic factors, or to enable the user to pay for library services.

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THE PLACE OF REFERENCE SERVICE IN RANGANATHAN'S THEORY OF LIBRARIANSHIP

Marcia H. Chappell

S. R. Ranganathan approached librarianship theoretically. He sought to establish fundamental principles from which effective library practices could be systematically derived. Although he contended that he had discovered these principles, his "five laws of library science," through a rigorous scientific process, it is clear that they and the concept of librarianship based on them are more fundamentally the product of Ranganathan's Hindu tradition. Ethical and metaphysical premises characteristic of Hinduism are reflected in his conception of the social and cosmic purpose of the library and of reference service as the basic means of fulfilling that purpose. Ranganathan believed that effective reference service depended on the intuitive "flair" of the librarian and on the use of an analyticosynthetic classification scheme. While the dependence of his concept of reference service on intuition lessened its practical value for American librarians, both his discussion of analyticosynthetic classification and the broad perspective from which he speaks are potentially important contributions to the understanding and practice of reference service in American libraries.

S. R. Ranganathan believed that effective reference service should be the end of all librarianship, and the whole body of his work may be seen as an attempt to achieve this end. Ranganathan views reference service from a perspective which is broader in two senses than that conventionally assumed by people writing about it in American library literature. First, he speaks at great length of the place of the reference function within a spiritual-ethical world view. He often discusses the role of reference service as making an important contribution to the social and intellectual welfare of the community, and, within the context of the reference process itself, he focuses on the quality of personal interaction between librarian and patron. Second, he regards analyticosynthetic classification as an integral part of reference service and the primary aid to the reference librarian in his basic task of helping people interact flexibly with the body of recorded knowledge.

Judging from the scarcity of references in the literature, one may observe that Ranganathan's concept of reference service has been virtually ignored by American reference librarians (as in fact has the whole body of his work). It is likely that a reluctance to grapple with his broad integrative approach to reference service, his explicitly Eastern outlook, and the peculiarities of his

[*Library Quarterly*, vol. 46, no. 4, pp. 378–96]

style have prevented American librarians from giving his work a critical, attentive examination. Yet the fact that his orientation is so different from ours may provide a valuable perspective which will enable us to look more critically at our own concept of reference service and to broaden our understanding of the reference function.

The Theoretical Approach to Reference Service

Samuel Rothstein's history of reference service in America [1] demonstrates that prevailing views concerning the nature and appropriate scope of reference service, and the ways these concepts are interpreted in practice, have evolved (along with beliefs about the nature of librarianship itself) in a rather ad hoc manner, in direct and immediate response to developments in scholarship and the corresponding sophistication of procedures to organize and access the body of knowledge.

In contrast to the American practice of building up a picture of good reference service by continually determining appropriate responses to immediate needs, Ranganathan seeks to begin with a firmly founded theoretical picture of librarianship and systematically to deduce specific procedures from it. Indeed, throughout his writings on reference service he seems as interested in demonstrating the systematic derivation of his views on reference practice as in discussing the views themselves, or, rather, the two cannot be separated, for Ranganathan holds that we can understand and accept his belief in the central role of reference service and his conception of the type of service such a role requires only if we understand and recognize as valid the process through which he arrived at his concepts. He appears to believe that once he demonstrates that his conception of reference service can be formulated in terms of his five "laws of library science," then it follows that the practices he advocates can be considered to have been scientifically deduced from the laws. If his five laws are valid, so, automatically, are the procedures based on them.

Spiral of Scientific Method

A brief examination of Ranganathan's "spiral of scientific method" is important, not only because it is a fundamental part of his approach to reference service but also because a workable set of principles, the formulation of which it is intended to assist, would certainly be valuable to American reference librarians.[1]

1. The following description is based primarily on chap. 8 of *The Five Laws of Library Science* [2, pp. 355–418].

According to Ranganathan, the scientific process includes four phases. The first phase involves observations of concrete particular facts. In the second phase, empirical laws or generalizations are induced from the facts observed in the first phase. In the third, occurring at what Ranganathan calls the zenith of the spiral, an act of intuition reduces the empirical laws to a few "fundamental laws." Finally, in the fourth phase deductive reasoning is used "to work out all the compelling implications of the fundamental laws" [2, p. 362], implications which are then tested against observations made in the first phase of a new cycle in the spiral. A "crisis" occurs when rigorously controlled observations cannot be predicted by the fundamental laws. The cycle then resumes, and new fundamental laws which encompass these new observations are discovered.

Ranganathan's spiral, which he presents schematically, appears to be no more than a restatement of the commonly held understanding of scientific method. It is not so much his description of the method as his application of it to librarianship that is open to question. He asserts that the process of scientific reasoning can be applied to the social sciences (which he assumes include librarianship) as well as to the pure sciences, the only difference being that in the social sciences the fundamental laws are called "normative principles" rather than hypotheses. The difference between these two types of laws is simply that, while hypotheses "furnish a descriptive formulation of the empirical facts of experience," normative principles "furnish an interpretative explanation of the empirical facts of experience and of the techniques found necessary in experience" [2, p. 365].

In his concern to put librarianship on a scientific basis, Ranganathan emphasizes the similarities between scientific hypotheses and normative principles and glosses over what many would consider the fundamental difference between them, the difference between description and prescription. He does not demonstrate convincingly that he has derived the five laws scientifically because he never confronts the question of how or whether the formulation of human values, convictions of what should be, can result from the structured dialectic of empirical observation and intuition through which a scientist arrives at a hypothesis. He simply assumes that they can and that both are the result of identical acts of intuition. These, whether they lead to normative principles or scientific hypotheses, are an "integral, timefree, space-free, realisation" that "transcends methodology of any kind" [3, p. 550].

The phrasing of Ranganathan's five laws, however, indicates that he is not comfortable in attempting to deal with normative principles in scientific terms. The laws are supposed to be based on the spiral of scientific method and were formulated originally in *The Five Laws of Library Science*. They are: (1) "Books are for use," (2) "Every reader his book," (3) "Every book its reader," (4) "Save the time of the reader," and (5) "Library is a growing organism." While only the fourth law is explicitly prescriptive, the first three are evidently so in intent. The fifth alone is purely descriptive. The account

in *The Five Laws of Library Science* of the development of the laws clearly shows that Ranganathan did not in fact use the scientific method to derive these basic normative principles. They do not represent any intuitive synthesizing of empirical laws. Rather, they are essentially a codification of current library thought and practice as observed and interpreted in light of Ranganathan's experience and his own value system. In terms of his spiral they are empirical laws rather than basic principles.

As J. Periam Danton has observed, *The Five Laws of Library Science* "does not attempt to define the functions of library activity on any other basis than that of present-day good library service; the discussion is not an open-minded enquiry into the validity of functions and activities" [4, p. 532]. Following Danton, one may say that Ranganathan has approached scientifically what should be a matter of philosophy: "Science concerns itself directly with concrete phenomena. A philosophy, on the other hand, is interested in aims and functions, in purpose and meaning" [4, p. 536].

Ranganathan and the Hindu World View

In fact, although Ranganathan claims throughout his work that his approach to librarianship is scientific, the impact of his own value system and of the Hindu tradition which nourished it is evident in many of his writings. While the conventional characteristics of a scientific methodology often appear to be imposed on his conceptions after the fact, the influence of the cosmic and moral world view of Hinduism seems integral to his thought, shaping it from within and forming the perspective from which he observes library practice and formulates his five laws. Ranganathan's approach to librarianship is fundamentally not scientific but religious in the broadest sense of the term. In his discussions of reference service he frequently refers to the metaphysical and moral contexts that define the place of librarianship within the social order. The influence of Hinduism in determining both the integrative nature of his approach to librarianship and the value system that shapes the way in which its components are integrated is unquestionable.

Two conceptions basic to all forms of Hinduism are a belief in cosmic unity, in the essential interrelationship of all things, and a conviction that knowledge is a powerful agent of this unity. In the ancient Vedic religion the sacrifice was an expression and ritual actualization of unity, of this oneness of earth the microcosm and heaven the macrocosm. The Vedic writings that developed in connection with the sacrifice are the most sacred of the Hindu scriptures because the formulas they contain embody the ritual power necessary to actualize the sacrificial unity. This cosmic power of the word, or "holy utterance," was *brahman*, a term which in the late Vedas and early Upanishads came to mean not only the power that binds macrocosm to microcosm, heaven to earth or cosmos to man, but ultimate universal power, the un-

changing reality which underlies the world of diversity and change. This universal reality, called *Brahman*, is, in a sense, itself a macrocosm which is identified with the microcosm *Atman*, man's soul, his individual reality.

By penetrating to his soul man can enter into the oneness of universal reality. The belief that cosmic unity required a knowledge of sacrificial formula, the "holy utterance" of brahman was translated into an emphasis on the knowledge of *Atman-Brahman*, that is, on a clear perception of the self in relation to the universe and all its inhabitants. This knowledge of the cosmic order, the "intuitive realization of the supreme metaphysical truth" [5, p. 131] through study of the scriptures is the "way of knowledge," one of the four traditional ways of attaining *moksha*, final liberation of the soul in union with the Absolute.

For the Hindu, one's dealings with other people—indeed, with all the inhabitants of the universe—are governed by the perception that each individual soul partakes of, or is essentially at one with, cosmic reality; that all creatures are thus vitally bound together, all are equally valuable; and that an individual can fulfill the law of his own nature and participate in the working out of the cosmic law, the universal *dharma*, only if he respects and lives in harmony with other beings.

As noted above, in an apparent attempt to provide himself with an objective authority for the five laws which give a coherent pattern to all his work in librarianship, Ranganathan does not explicitly admit the participation, much less the central role, of Hindu premises and beliefs in the formulation of these laws. He does, however, rely either directly or implicitly on them in order to express the social and cosmic significance and the proper application of the laws.

Ranganathan's belief in the importance of librarianship and his understanding of its primary function are rooted in a faith in the pragmatic and ultimately cosmic value of knowledge. He declares that

> . . . the vital principle of the library—which has struggled through all the stages of its evolution, is common to all its different forms and will persist to be its distinguishing feature for all time to come—is that it is an instrument of universal education, and assembles together and freely distributes all the tools of education and disseminates knowledge. . . . This vital principle—"the spirit of the library"—persisting through all its forms is like the Inner Man; and to it are applicable the words of the Lord:—
>
> "As a person casts off worn-out garments and puts on others that are new, so does the embodied soul cast off worn-out forms and enter into others that are new. . . .
>
> "He cannot be cloven; he cannot be burnt; he cannot be wetted; he cannot be dried; he is eternal, all-pervading, steadfast and immovable; he is the same forever." [2, p. 354]

This passage suggests that the normative principle from which Ranganathan actually (though not systematically) derives his laws of librarianship is faith in the value of knowledge, and that this faith is closely bound up with the Hindu tradition. This impression is reinforced by the opening pages of *The Five Laws of Library Science*, in which he quotes this passage from the

Manu-Smrti: "To carry knowledge to the doors of those that lack it and to educate all to perceive the right! Even to give away the whole earth cannot equal that form of service" [2, p. 9]. That he immediately follows this quote with the statement of his five laws is a clear indication that he views the practice of librarianship within the context of eternal dharma, or "the right," and that he conceives of the five laws as principles to guide practice in accordance with the right.

In *Preface to Library Science* [6], a book based on lectures presented to library school students in India, Ranganathan pictures librarianship as a social institution which links cosmic and personal dharma. He contends here that the "values which one can get by caring for library science" can be equated with four basic traditional Hindu values. Librarianship bestows personal profit, or *artha*, on those who practice it. To society in general it brings *kama*, prosperity and well-being. The contribution of librarianship to the "creative joy" of those who practice it, the "fulfillment of one's intellectual personality by creative work," and to the "fulfillment of [a] nation's mission" is a manifestation of dharma, the pervasive natural law. Finally, moksha, the "delight of release," may be attained through self-forgetful concentration on the practice of librarianship [6, pp. 17–30].

Librarianship enables not only librarians, but library patrons as well, to progress from what Ranganathan calls the "vital plane" to the "mental plane" and finally to the "spiritual plane" of existence. This fulfillment of individual potentialities contributes to, and occurs only in conjunction with, the progress of the entire community in accordance with the universal dharma. The library performs an essential role in this individual and social progression because it enables man and society to grow on the mental and, more indirectly, the vital levels:

> In the vital level, man needs for his growth and happiness food, shelter and clothing, and so it is for society. . . . The technical processes involved in all these stand in need of constant improvement to fill up the ever-increasing gap between nature's direct bounty and the needs of society. . . . Thus growth in the vital level is dependent on growth in the mental level—un-precedented enrichment of the memory of one and all by the absorption of ever-shifting information and the cultivation of intellect of a much larger number than hithertofore to the point of creative ability. Thus the attainment of the happiness . . . derivable from unimpeded development in the vital facet of personality demands as a help that the mental facet should too develop apart from its own intrinsic need for growth to lead to the joy . . . of knowing and creative thinking. [6, pp. 150–51]

Spiritual fulfillment, the final level of development, which subsumes vital and mental development, is not, "in the present stage of human development" [6, p. 153], generally attainable through any effort on our part. The fact that the mental level, at least, is accessible should be fully exploited, therefore, not only because it is intrinsically valuable, but because it contributes to the gradual evolution of society toward "spiritual fulfillment."

This suggestion becomes more definite in *Classification and Communication* [7],

in which he discusses cooperation as the means to and (when total) the ultimate end of mental and spiritual growth. At the mental level both individual development and social progress depend on the collaboration of many people. Reciprocally, the "mental heritage" of society, that is, the pool of knowledge amassed by individuals aided in varying degrees by their contact with others, itself "helps and intensifies co-operative living at all three levels—vital, mental, and spiritual. It demands, leads to, and makes possible a more extensive co-operative life at all the three levels" [7, pp. 126–27]. The ultimate end of this "perennial self-enrichment of mental heritage" [7, p. 127] is, on the personal level, a state of "intimate, sympathetic at-one-ment with everybody else and everything else in the universe. . . . This is the burden of the song in the *Divine Utterance* of India called the *Bhagavad Gita*" [7, p. 125].

This individual spiritual growth, which depends in part on cooperation at the mental level, will both contribute to and be paralleled during "the span of life of humanity" by an evolution toward the universal harmony which is the essence of Hinduism:

> . . . there is every hope that the intellectual binding force, which transcends territorial boundaries, will eventually gain in strength and lead to co-operative living on world-scale. . . . The human race is still in its infancy, characterised by explosive emotions and narrow exclusiveness. When it matures, eludes ethnic groups, develops control over emotions, becomes dominantly intellectual, and enters the supra-mental stage . . . it will get glimpses of the delight of co-operative living in un-truncated, infinite context—the delight . . . which stray individuals have realised hitherto and denoted by the profound term Pure Existence *cum* Pure Consciousness *cum* Pure Delight. . . . [7, 99.138–39]

According to Ranganathan, the purpose of the library is to participate in the unfolding of this universal destiny by educating individuals into a sense of intellectual and social cooperation and unity, into a realization of interrelatedness.

Ranganathan's Theory of Reference Service

Reference service is the basic means of fulfilling the social purpose of the library. Ranganathan asserts again and again that reference service is the very essence of librarianship and "the ultimate human manifestation of the five laws" [8, p. 43]. "Reference service is the primary motive and the culmination of all library practices. Its varieties, the what, why and how of them, the preparation for them, the varieties of bibliographical and reference materials, and the organisation of the time of the staff in relation to them—all these are drawn out of the five laws . . ." [2, pp. 383–84].

Objectives and Scope

In some of his writings, notably the book *Reference Service* [9], Ranganathan seems to subscribe to a "moderate" view that the scope and intensity of reference service should vary according to characteristics of the patron and

type of library, and that reader instruction rather than direct provision of information is appropriate in certain cases. His five laws and the definition of reference service which he bases directly on them, however, do not support such a position. They clearly call for a more extreme and intensive form of service in all types of libraries. Ranganathan defines reference service as

> the process of establishing contact between a reader and his documents in a personal way. "His documents" means every one of the precise documents needed by him at the moment. It also means all the documents likely to be of use to him at the moment. It further means establishing the contact without any loss of time for him. It is not possible to do all this for a reader without an intimate understanding of his precise interest at the moment. To get this understanding, there must be an intimate communion between the librarian and the reader. From the first moment of the reader asking for help to the last moment of his getting all his documents, the librarian will have to be personally administering to the needs of the reader. Therefore, reference service is essentially personal service. [9, p. 53]

This definition leaves no room for instruction as a function of reference service in any kind of library. Moreover, Ranganathan himself argues often and at great length that the five laws call for the establishment of intensive reference service, virtually a selective dissemination of information (SDI) service, in academic and public as well as special libraries [10, p. 91]. His characterization of the "documentation service" which special libraries provide leaves little doubt that its objectives are essentially the same as those he has specified in his definition of general reference service. The main difference between the two appears to be simply that documentation service deals with smaller, more specialized, more recently published, and thus less accessible packages of information, which he calls "nascent micro documents." He defines documentation service as:

1 The promotion and practice of bringing into use nascent micro subject by each specialist (Law 1); and
2 Pinpointed (Law 2);
3 Exhaustive (Law 3);
4 Expeditious (Law 4) service of nascent micro subject to specialists;
5 In spite of the continuous ever-increasing cascade (Law 5) of nascent micro subject in an ever multiplying number of specialised subjects, communicated through several thousands of periodicals. [11, p. 158]

Thus the whole thrust of Ranganathan's work, as his social values interpreted through the five laws require, is toward total and intensive information service in all libraries.

The Reference Process

In contrast to American librarians, who tend to conceptualize the reference process as a series of distinct temporal stages, Ranganathan sees it as a whole, a complex of activities meshed too tightly to be treated as separate components. These activities are bound together and most adequately described in terms of the personality of the librarian and the use of an analyticosynthetic classification system.

The "Flair" of the Librarian

Ranganathan contends that an essential function of personal reference service is to breathe a "redeeming" sense of life into what would otherwise be a purely mechanical process of information transfer:

> . . . mechanised things are dependent things. They exist for use; and they are dependent upon use for beauty. . . . Because of this need for redeeming use, the multitude of mechanisms, surrounding us, may justly be regarded as appealing objects making persistent demands upon us. Because of their inanimation they threaten us with the sense of death unless they are continuously dowered with our own life energy. . . .
>
> When the material and technical activity and, still worse, red-tape activity, of conducting a library begin to take precedence over the experience of living and serving, sooner or later we shall have to pay in ennui and decadence. . . .
>
> Hence the need for introducing a human agency to redeem everything else by putting them to active use. When the reader comes amidst the library, there must be someone to say
>
> "Take my hand;
> For I have passed this way,
> And know the truth."
> [9, pp. 73–74]

The aspect of reference service Ranganathan is talking about here is not prescibed by the five laws. He is refering to a personal quality which he calls "flair," a quality that is different in kind from the intellectual skills which a "pinpointed," "exhaustive," "expeditious" service requires:

> A reference librarian . . . cannot do his best by intellectual training alone. No doubt, a good intellectual grind is necessary as a start. But, it is not sufficient to meet all situations. Ultimately, it is all a matter of flair, we say. What is flair. It is a subconscious solution found for getting over difficulties. There is perhaps the help of a dash of intuition. Flair is an intensely personal quality. It has to grow in an individual. Some may be born with it. It transcends analysis with the intellect. It transcends mechanisation. It transcends even standardised thinking. The personal help of a reference librarian, with an abundance of flair, is often necessary to make the library achieve its complex of purposes, social and individual. [9, p. 173]

This undefinable personal quality contributes to what Ranganathan believes is the ultimately indescribable essence of reference service: "Indeed, reference service is ineffable. Its details are inexhaustible. Its aroma is indescribable. It is intangible. It is the wholeness of the reference work that does the work. But its whole picture is beyond the intellect. Still more so, it is beyond the senses initiating and feeding the work of the intellect" [9, p. 174]. Such a contention is in effect an admission that his description of reference service in terms of the five laws leaves out its fundamental character.

Ranganathan compares the ineffability of reference service to the indescribable nature of mystic experience and attempts to discover in the picture of the righteous man, which appears in Hindu religious and mystical texts a model for the librarian who aspires to flair: "It may . . . be of value to reproduce here some mystic word-pictures, admitting of being taken as if they were pictures of reference service—its purpose, its emphasis on personal or

individual service, the qualities to be developed by a reference librarian, his preparation internally within himself, his preparation in relation to documents, his devotion to service without flirtation with fruits, and above all his geniality and his sharing with readers their problems, their struggle, and their ultimate joy of achievement" [9, pp. 175–76].

The Reference Librarian as a Righteous Man

In *Reference Service* and in the later book *Documentation* [12], Ranganathan not only quotes but summarizes and paraphrases traditional writings in order to demonstrate their direct applicability to the conduct of reference service. Thus in *Reference Service* he presents the "import" of a passage from the *Taittiriya* Upanishad as follows:

> The reader guest is supreme to you.
> Give him service with all attention and in all sincerity.
> Give him service to the entire capacity at your command.
> Give him service in all modesty and in full freedom from any touch of prestige or ego.
> Give him service in full measure lest there should be any offence to the Laws of Library Science.
> Acquire the best of knowledge and information for giving him in your service.
> [9, p. 177]

In the same vein he summarizes the attributes of the four incarnations of God that appear in the *Ramayana* and constructs from these attributes a model for reference librarians:

> He must emulate Bharata in hard work sailing on the steam of his own conscience and in knowing thereby every document in the library, so as to make the library yield ten times more result than it would otherwise. This he must do, not for his own private purpose, but for the good of others. To be able to live such a life, he must emulate Satrugna in continually controlling the little ego in him. He should emulate Lakshmana in serving readers efficiently and without any eye on reward or praise or even a word of approbation. He should emulate Rama in geniality, charm, ease of accessibility, freedom from any sense of prestige, equableness of temper, love and respect for readers, willingness to share their problems, their difficulties, and the joy coming on them with the solution of the problems and, above all, in attaining competence of a high order. [9, p. 180]

These precepts may create a picture of the ideal reference librarian, but only in the sense that it is also a picture of the ideal human being. It is easy to form an impression that Hindu values, the application of which to reference service Ranganathan stresses, somehow set it apart from other areas of human activity. It is as if the reference librarian should possess certain moral qualities because he is a reference librarian rather than because he is a human being subject to cosmic law. What does appear necessary is to show how such attributes are to be exemplified in the day-to-day practice of reference work. How is one who is required by virtue of his humanity to adhere to the

general moral law to interpret and carry it out in his specific capacity as a reference librarian?

Ranganathan relates the traditional rules of human conduct to reference service by saying in effect that the righteous man makes a good librarian. Rather than using such rules to set up practical standards of conduct, he presents a picture of a mythical ideal reference librarian. If in his contact with the reader the librarian can convey the "radiance" of his personality [2, p. 71], and if he can marry himself to reference service [9, p. 346] and dedicate himself totally to fulfilling its goals [2, pp. 78–79], then he will be able to determine and perform the tasks required of him in any reference situation. Ranganathan does not suggest how an ordinary librarian, subject to the weakness and selfishness of human nature, can attempt to approach this ideal. Evidently all finally depends on the indefinable quality of flair. And, despite his repeated insistence that his scientific spiral has put librarianship on a systematic basis, his Achilles' heel, at least from the perspective of an American librarian, is the fact that his conception rests on a complex of qualities possessed by an individual that results in some mysterious way from his being in tune with the cosmos. Such a unfathomable individual qualities can not be encompassed by any system of objectives and methods which people establish to fulfill the functions of the library. Ranganathan thus commits himself to a contradiction, for despite the five laws and the spiral of the scientific method, librarianship is essentially invulnerable to systematization.

By contrast, American librarians are concerned about the personal qualities of the librarian only insofar as they can be incorporated into a system. Although convinced that the librarian must shape his service to the patron's unique personality and perceptions, and aware of the practical value of such qualities as sympathy, tact, and "approachability," American librarians address themselves primarily to designing a set of procedures whose purpose is to compensate as much as possible for the individual librarian's inevitable lack of flair. As the body of literature on the problem of question negotiation indicates, they look more closely than Ranganathan at the actual situation, at the characteristics of inquirer and librarian, the nature and quality of their interaction, and their perceptions of the library and each other. They try to determine how the interplay of all these elements affects the provision of reference service and what procedures can be established to make such interaction more fuitful. Refusing to allow the success of the reference interview to rest on the innate qualities of an individual librarian, they draw on the findings of such disciplines as psychology, linguistics, and information science in an attempt to deepen their understanding of the various personal and intellectual factors which must be dealt with during the reference process and to establish procedures which will effectively coordinate them. While a good emotional climate is important, or perhaps even essential for American librarians, it is in the end no more than an aid in the accomplishment of the primary function of their service: the fulfillment of the inquirer's information need.

Analyticosynthetic Classification

According to Ranganathan, a classification scheme is an effective tool only insofar as it enables the reference librarian to supply the inquirer with information which fully and precisely answers his needs. Thus the scheme should be based on, and reflect, the dynamics of thought, the way the mind separates out concepts and bits of information and recombines them and incorporates them into new patterns. This process of thinking is reflected (although sometimes blurred by the idiosyncrasies of language) in the expression of ideas recorded in documents and in the way people perceive and express their own need for information. A classification scheme should, insofar as possible, lay bare the basic structure of ideas by cutting through the accretions of natural language (the superficial "verbal plane") which obscure it and prevent a clear perception of the relationships among categories of subjects. Without such a tool it is virtually impossible for a librarian to arrive at a true notion of the precise nature of patron needs or the subjects of documents.

A classification scheme which functions in the manner Ranganathan envisions would not only be invaluable to a librarian attempting to connect an individual inquirer who has a particular immediate information need with the needed information, it would also aid specialists engaged in research by clearly and minutely displaying the interconnection of developing subjects. Moreover, as Ranganathan explains at length in *Classification and Communication* [7], such a scheme could serve as an international language, taking its symbols from the "notational plane"—symbols which, unencumbered by the vagaries of natural language, could be ordered according to principles rooted in the universal structure of knowledge.

Such desiderata, Ranganathan believed, could be embodied only in an analyticosynthetic classification scheme. The classification of a document according to such a scheme involves applying stated principles to break a subject down into basic facets or components and arranging them according to various principles of preferred order. The categories and relations involved are then encoded in digits and symbols to form a class number.

The analysis of a subject, the grasp of its structure, is unrelated to a particular classification scheme. The way the subject is expressed, on the other hand—the always relatively imperfect attempt to show in linear form its complex nature and its multidimensional relationship with other subjects—is a function of the individual scheme. Although Ranganathan believed that his colon classificaiton, with its flexibility and capaciousness, was more sensitive than any other to the complexities and the constantly shifting nature of the field of knowledge, it is its power of permitting the manipulation of subject components that is fundamental.

Classification and Reference Service

The ability of an analyticosynthetic scheme to bring a virtually unlimited number of ideas into one system enables a reference librarian to connect a patron's interests, with all their complexity and ramifications, to the various combinations of concepts expressed in documents. In order to make this connection he must use both the methods of classification prescribed by Ranganathan's principles and the completed work of catalogers and classifiers who have employed the same methods. The reference librarian, preferably with the aid of the classified catalog, facet analyzes and resynthesizes the subject of the inquirer's interest and discovers through the classified catalog relevant documents whose relationship to this interest is clearly apparent.

The concept of analyticosynthetic classification supplies Ranganathan with terms which enable him to set forth his understanding of the reference process with a precision and an intellectual rigor lacking in works such as *Reference Service*, in which he speaks only generally of the use of classification. In *Reference Service*, he shows how a librarian can become familiar with the "wave-front of knowledge" through

> the joint pursuit of diverse problems along with a specialist in his own subject-field. His reaction to the entries in a bibliography, his appraisal of articles, his involuntary remarks on them, his preference as between them, and the exchange of questions and answers with him—all these give an insight into the new trends in the subject-field. The assimilation of them becomes effortless and lasting. Such experiences with specialists in diverse subject-fields, coming closely one over another, helps the sensing and the assimilation of a panoramic view of the happenings in the wave front of knowledge. No profession other than that of the reference librarian has a chance to get such a joyful view of the universe of knowledge. [9, p. 367]

Information about the resources of the library, the subject orientation of patrons, and the structure of knowledge, which the individual librarian assimilates in the course of his work, must be shared with colleagues and is thus further assimilated into the system of librarianship. Such information is not only directly useful to other reference librarians likely to face similar situations, but may also provide feedback which will allow catalogers, acquisitions librarians, and documentation and abstracting centers to monitor patron needs and modify bibliographical tools accordingly. Ranganathan argues that such sharing is desireable [9, pp. 367–69]. He does not, however, indicate in any detail how it should be systematically carried out. He ignores the need for organized lines of communication and for a standardized language which would facilitate the precise and economical transmission of information among the various components of the library system.

By contrast, in his writings dealing with documentation service and classification, Ranganathan argues that just such a language, in the form of analyticosynthetic classification, is an essential aspect of reference service. He describes analyticosynthetic classification as an instrument which in every

phase of reference work systemizes choices that in *Reference Service* depend on the uncontrollable wisdom of intuition. It is an instrument that binds all bibliographic tools into a mutually strengthening interdependence or, as Ranganathan calls it, a "symbiosis" that economically and systematically connects readers and information. Thus the immediate provision of reference service is directly and intimately dependent on the analyticosynthetic scheme and the classified catalog, which in turn are enriched by the assimilation of experience acquired during reference service.

In reference service, Ranganathan observes, the librarian "applies the classification scheme in the ultimate stage of library service which is effective contact between the right reader and the right unit of thought in a personal way" [7, p. 116]. To accomplish this he must

> "facet-analyse" the questions put by the specialist—in other words, "facet-analyse" the mind of the specialist reader. The "facet analysis" has to be done in a subtle way so that the specialist does not become touchy, conscious of his being analysed. This requires great tact. By the trial and error method, the Reference Librarian (= Documentalist) can narrow down the range within which the nascent idea sought by the specialist lies. He should go on narrowing this range until the nascent subject sought by the specialist is likely to be within a pack of not more than 50 to 60 consecutive catalogue cards in the classified part of the catalogue. Surely it is easy for the specialist reader to glance through these 50 to 60 cards—arranged in a helpful filiatory sequence of these subjects. It may then be easy for him to say what exactly he has been looking for. [8, p. 16]

The trial-and-error method of specifying a patron's field of interest is guided by constant reference to the pattern of feature headings in the classified catalog. These are the representation of subjects in natural language rather than by class numbers, a translation arrived at through the chain procedure. "These throw before the reader's eyes an ordered panorama of all related subjects. . . . The orderly display of specific subjects provided by an analytico-synthetic classification coupled with chain procedure gives to a reader the same kind of help as an orderly display of articles in a shop does to a customer" [7, p. 106]. So the classified catalog makes it possible for the librarian both to discover the inquirer's needs and to locate documents which will satisfy them.

The analyticosynthetic technique, based as it is on characteristics fundamental to the whole field of knowledge, enables the librarian to grasp for himself developing patterns of knowledge and new interrelationships among the subject specialties that he has been made aware of through his contact with patrons. As E. J. Coates remarks, "The surprising and satisfactory thing about subject classificatory structure is that the general pattern for most subjects is more or less the same. . . . It is not necessary to learn the classification pattern for each subject anew. Once the general categories are understood in their application to a few subjects, the pattern for other subjects reveal themselves almost instinctively" [13, p. 156].

The analyticosynthetic technique, therefore, may be said to liberate the librarian from total reliance on the calssified catalog, which may in some areas be based on knowledge less current than his own. As a matter of fact, his function of relating new patterns of concepts, as revealed to him in the immediate interests of his patrons, to the subject structure laid out in the catalog, puts the reference librarian (at least one working in a special library) in a unique position to supply classifiers with the information they need in order to remain responsive to developments in the various subject areas: "It is they [reference librarians] that have the fullest chance, every minute of their life, to see the extent to which library classification fulfils itself. They should observe its faults and shortcomings as disclosed in the glow of the triple contact between themselves, the reading and kindred materials and their users." For, people engaged in less public areas of library work

> have only occasional chances to see if the classificatory language they conceive, design, and build is maintaining itself library-worthy and service-worthy. The readers themselves do not know what to expect of the library as service. The inadequacy of the service rendered has to be inferred often by the fleeting expression of feeling—often expressed not vocally but by other subtle manifestations. The reference librarians are the only persons who have a chance to observe them, integrate them and trace them to faults in the different parts of the machinery of the library. It is they that are in the best position to advise about the faults so discoverable in library classification. These persons should be men who love humanity and derive their own joy at the sight of the joy appearing on the faces of readers by satisfied wants. [14, pp. 123–24]

This passage suggests that the value of a reference librarian lies not simply in his ability to carry out certain delicate procedures, to serve in effect as a vital and particularly sensitive component in the bibliographical system, but in subtle qualities of perception and responsiveness that cannot be structured into any system. While vehemently contending that analyticosynthetic classification is the central tool of librarianship and an indispensable aid to the reference librarian, Ranganathan never lets us forget that it is no more than a tool, in no way comparable to the skills of the people who use it—skills that are inseparable from moral and intellectual properties which determine the nature and quality of all human interchanges. Thus Ranganathan always returns in the end to the fundamental intuitive property of flair.

Classification and Intuition

This faith in flair causes Ranganathan finally to view the principles of classification themselves as derived not systematically through the spiral of the scientific method: observation, induction, intuition, and logical deduction. Rather, they are apprehended mysteriously and spontaneously, as the result of a kind of intuition which seems almost a gift of grace which operates outside the bounds of any human structure:

Indian tradition is charged with the idea that whenever there is obliteration in functional distribution as a distribution in vogue becomes decrepit, and a totally new distribution becomes necessary, God himself appears in human embodiment to set right the functional distribution. . . . It is compelling and inevitable that it is not inappropriate to describe the creative classificationist as a mere medium or channel through which the classificatory language, needed by humanity at the age in question, flows out into manifestation. It is part of the grand Cosmic Economy which takes all space and all time within its context, that an intuitive classificationist of the right type is thrown forth by humanity at the right time and at the right time only. [15, pp. 15–16]

Since the principles upon which an analyticosynthetic classification is founded are assumed to be useful to the extent that they reflect the way the human brain deals with ideas and information, it would seem that the development of such a scheme should presuppose a detailed investigation of cognition and linguistics. Ranganathan does in fact call for studies which will determine the fundamental characteristics of human thought [16, pp. 407–8]. However, there is little evidence that he ever undertook the kind of systematic investigation that he advocated or attempted to make use of available research. It is ironic that his discussion of the five laws attempts to deal scientifically with the determination of values, but when treating an intellectual question, the resolution of which would seem to require a process of observation, induction, and deduction, he simply expresses his faith that it will be resolved by the inbreaking of a cosmic power that transcends human process.

It is interesting that Ranganathan does not acknowledge the possibility that the cosmic law, which urges classification toward the form in which it can contribute most fully to the harmony of the universe, may employ for this purpose means more subtle and systematic than the deus ex machina device of raising up an intuitive classificationist whenever the current classification becomes obsolete. He speaks of intuition in religious rather than scientific terms (as supernatural inspiration rather than the hunch or insight that occurs at the zenith of a scientific spiral). He recognizes that while human methodologies are nourished by mystical intuition, that intuition remains supernatural, a power that cannot be incorporated into, or invoked through, any human method.

Thus the method Ranganathan used to develop the principles on which his classification system is based is finally not describable or teachable or subject to intellectual test. The efficacy of the classification system depends simply on Ranganathan's own flair, on the truth of his intuition. To those lacking faith in his inspiration, the principles seem as likely to be rooted in idiosyncrasy as in metaphysical reality. Moreover, any addition to, or modification of, the basic rules must be contingent on the availability of classificationists who share Ranganathan's power of intuition.

The dependence of analyticosynthetic classification on intuition does not destroy the classification's value or usefulness. Ranganathan has demonstrat-

ed quite convincingly that it is a potentially powerful instrument of reference service. As such, we must treat it as a tool of the same species as any of the techniques used by Western librarians. It is provisional and pragmatic; its value lies not in any direct correspondence with some fundamental reality but in its immediate "helpfulness," as decided by criteria no more authoritative than the judgment of the librarian and the patron.

Conclusion

The same observation may be made of Ranganathan's concept of reference service and (indistinguishably) librarianship in general. The value of his work is by no means negligible, but neither is it fundamental. He does not, as he tries to do, find a way of firmly anchoring the jerry-built structure of librarianship to the bedrock of metaphysical reality, of keeping it constantly attuned to the cosmic plan. As I have noted, he attempts to justify his view of reference service by pointing to the systematic manner of its derivation and, less formally, by establishing its integration into the cosmic pattern, its role in the fulfillment of natural and moral law. Neither argument is compelling. He himself does not rigorously apply the spiral of scientific method to librarianship or show that such application is possible; and people who do not already share the body of doctrine and imagery characteristic of Hinduism, or its integrationist orientation, are unlikely to listen sympathetically or attentively to his moral and spiritual appeals.

Ranganathan's justification of his vision is finally no more than a statement of faith in intuition. Since intuition is uncontrollable and incommunicable, we have no way of systematically exploiting it or of judging its claims. Lacking the assurance that Ranganathan's concept of reference service is valid because of the validity of its source, we must judge it against our own pragmatic common-sense standards of helpfulness. But because Ranganathan's bent was theoretical and focused primarily on the derivation of basic principles, and because he was ever confident of the librarian's flair, he generally paid little attention to specific questions of how his principles are to be followed. The picture he presents of actual reference practice, as a result, is vague and superficial, with little to distinguish it from any general statement of American reference procedure.

Ranganathan's treatment of analyticosynthetic classification and its relationship to documentation service is the main exception to his failure to work out the concrete implications of his concepts, and his work in this area is, as I have suggested, a potentially substantial contribution to American reference theory and practice.

Such a radically different perception of the function of classification as Ranganathan's may broaden the perspective of American librarians who have been locked by exclusive familiarity with one of the enumerative

schemes into the narrow view that classification is principally a method of arranging books. Ranganathan shows that the potential value of classification as he conceives it is much more extensive and fundamental than this. He makes it clear that in an analyticosynthetic scheme we possess in theory a powerful and elegant means of forging the scattered aspects of library work into an instrument uniquely suited to the provision of reference service. Such an instrument would enable the librarian to relate query and answer with a precision not at present common because it is sensitive to the nuances of thought that determine the way the ideas of the inquirer and the corresponding ideas stored in documents are expressed.

While Ranganathan's clearest potential contribution to reference service in American libraries lies in his concept of classification, the perspective from which he writes is not without importance. His attempt to integrate the intellectual, moral, and emotional components of reference service and the intellectual and moral pressures exerted on it into one multidimensioned cosmic vision was unsuccessful. The effort itself, however—the attempt to root principles and practices of reference service in a cosmic, metaphysical reality—can as least awaken American librarians to the limitations of their own approach to reference service. It may to a degree act as a counterweight to their tendency to focus narrowly and restrict their attention to immediate concerns. It may stimulate them to evaluate and modify reference procedures not simply by referring to the immediate pragmatic and relatively unexamined standard of patron satisfaction but by attempting to place this criterion within the larger context of social value.

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CHARACTERISTICS AND USE OF PERSONAL COLLECTIONS

Mary Ellen Soper

This article reports a study of the characteristics of personal collections of a sample of authors drawn from the general fields of the sciences, social sciences, and humanities, and the relationship between the size and composition of their collections and the location of works referred to in certain of their recent papers. It was found that the largest proportion of works cited was located in personal collections, a smaller proportion was located in libraries in departments and institutions to which respondents belonged, and the smallest proportion was located in libraries in other cities and countries. Several measures of the number of cited works were devised to facilitate comparisons between different kinds of materials cited in papers in different fields. The reasons why respondents built up and maintained personal collections were also studied. The methodology of the study involved a questionnaire, telephone interviews, and actual counts by the investigator of a number of collections.

The flow of information and the manner in which it is used by the people who need it has been studied in many ways and by many investigators. One popular method of studying information transfer is the examination of the citations included in published works. Citations are regarded as signposts left behind after information has been utilized. Their presence indicates that the works to which the citations refer were judged to be important enough to record.

Underlying the numerous analyses of citations that have been made is an assumption that has been repeatedly questioned by researchers in the field of library and information science. This assumption is that citations are made to the best possible works; that writers sift through all, or even just many, of the possible references that could be cited and carefully select the ones judged best. This assumption can be viewed with suspicion because of doubt that individuals act in such ideal ways. The motives behind human behavior are complex and difficult to isolate and study. Some of the factors which have been thought to affect the selection of works to be cited have been investigated in the literature. The study reported here focuses on the effect of physical accessibility upon the selection and use of references and, specifically, on the most physically accessible location of all, the personal collection.

[*Library Quarterly*, vol. 46, no. 4, pp. 397–415]

A basic assumption of this study is that physical accessibility is an important predictor of use of information sources in the general day-to-day activities of researchers, and that it affects the selection of citations which are indicators of this use. If physical accessibility is an important predictor of use, then that information which is closest to a user will be used in preference to information more distant unless confounding factors intervene, such as a preference for formal documentation over informal sources. The present investigation is limited to a study of the location of what has been cited in published works. Informal sources are not considered unless referred to by citations.

The Literature of Physical Accessibility

Physical accessibility, the physical location of information and the effect this location has on the use of the information, has been speculated about for years. In a 1932 article, Waples reported that accessibility of reading matter was found to be the most important single influence upon actual reading and that accessibility and readability in combination virtually determined what the general reader read [1]. Fussler found that physical accessibility was an essential part of use, and that there were situations in which the absence of reasonable physical access resulted in a complete absence of use [2].

A 1953 study by Hertz and Rubenstein into the work habits of research teams found that propinquity was a factor which improved the use of published material [3]. Zwemer concluded that biologists want their information sources close at hand and rely on libraries infrequently for these sources [4]. Friis, in a critical analysis of the use of citations as a research technique, concluded that citations were intimately linked to the degree of physical and bibliographical accessibility of materials [5].

A 1966 dissertation by Harris was concerned with accessibility as it affected undergraduate use of academic libraries when motivated by curricular requirements [6]. Four library activities were used to test the hypothesis that increased accessibility increased use, and a measurable increase in use was found in all areas. A thesis by Rosenberg in 1966 revealed that research workers preferred information-gathering methods which they estimated were easier to use, rather than those methods they judged would provide the greatest amount of information [7, p. 19].

A study by Pings found that the physical arrangement of library materials was an important factor in accessibility, and that the physical location of the collection affected how it would be used by browsers [8]. Allen's 1966 dissertation investigated the information-gathering habits of scientists and technologists and found that the selection of a channel to use in gaining needed information was based to a very large degree upon its accessibility [9]. Allen and Gerstberger pursued the concept of the cost of using a channel in a 1967 study which compared the rate at which ideas were accepted or rejected, for

each of seven channels, with engineers' perceptions of the technical quality and reliability of the information delivered by each of the channels. Accessibility was found again to be the dominant criterion determining the relative frequency with which information channels were used [10, pp. 10–11].

In a 1966 dissertation, Barker found that among the deficiencies of citations as valid indicators of utility of literature was the possibility that valuable literature may be unavailable to a researcher for physical, bibliographical, or linguistic reasons. If this is true, citation analysis reflects availability of the literature, as well as its utility [11, p. 39]. The *DOD User Needs Study—Phase I* by the Auerbach Corporation [12] and *Phase II* by North American Aviation [13]—revealed the importance of the local environment as a source of information as opposed to the use of libraries and information centers. The local work environment included colleagues, personal collections, and local departmental sources.

A study by Woodburn concluded that there were four levels on which printed material could exist—the personal collection, the departmental library, the university library, and other libraries away from the institution [14]. The best system at a given cost would be one in which the most-used material would be in the personal collection, and so on up the levels until the least-used material would be held at the national level. The annual chapters surveying and criticizing user studies, appearing in the *Annual Review of Information Science and Technology* since 1966, have also described many studies which reveal the influence of physical accessibility upon use of literature.

The Literature of Personal Collection

A consideration of the location of the sources of formal documentation must not neglect the personal collections of published and unpublished materials assembled by researchers and located in their offices, homes, or in both locations. Of all collections available to a researcher, these are the most easily accessible. Though they can contain a wide variety of print and nonprint materials, books, journal issues, preprints, and reprints or photocopies of journal articles usually make up the bulk of the collections. The size of such collections may range widely, from several items up to thousands. While personal collections sometimes do contain unique items held nowhere else, usually the items duplicate those in a nearby institutional library. Arrangement is highly individualistic and reflects the interests and work habits of the owner.

Institutional libraries, as distinct from personal libraries or collections, are collections of written and other material assembled for the use of more than one person and usually reflect the needs of users in more than one specialization. By their nature they are not as close to a user as his own collection. Ideally, a library is located as close to as many of its users as possible, but as

the number of possible users increases, the mean distance from all of the users is likely to increase. Even if the user has his office in the library, the library cannot be thought of as his personal collection. It is not designed for his use alone, and when other users' needs interfere with his own, the material he may wish to use may not be available to him. Only the personal collection provides optimum physical access at all times.

Though the reason personal collections are built vary, it seems safe to suppose that they reflect their owner's interests and work habits. They may be built up in various ways. Sometimes materials are placed in them in the expectation of later use (one may routinely file notes of current reading, photocopies of articles from journals browsed through, offprints, reprints or preprints of papers received). Other materials are placed in them in the course of actual ongoing research (articles which are to be cited for example, may be copied, cited, and then filed away in a personal collection). In each case, the materials collected are actually relevant to or are expected to be relevant to certain needs and are placed in personal collections as an assurance of availability.

Personal collections are clearly an important source of information; yet there is little prior research into their composition and use, though there are hints of their existence in past studies. Recently there has been increased interest in finding ways to make them more useful to their owners.

Hogg and Smith studied a sample of 157 applied scientists and technologists of varying ranks employed in British laboratories [15]. Forty-eight percent of the sample had purchased books in the past year; 32 percent were subscribing to their own journals. Zwemer's limited investigation of the way biologists acquire information revealed that nearly every biologist in the sample kept reprints, abstracts, or notes on cards [4]. Zwemer estimated that the average biologist added approximately 200 new items annually to his personal collection and nearly every one had subscriptions to at least two journals as a result of membership in various scientific societies. He found that as departmental libraries (under the jurisdiction of the main institutional library) develop and grow, small personal collections also develop and grow, apparently in an effort to escape the limitations imposed upon the use of materials by centralized acquisitions and cataloging. The inaccessibility of serial volumes sent to a bindery by the library was also cited as a reason for a biologist to maintain his own subscriptions.

The *DOD User Needs Study, Phase I,* revealed that 17 percent of the users went first to their own personal collections for information, while 13 percent went to department bookcases or files [12, pp. 1–18]. These two sources, combined with colleagues (21 percent), made up 51 percent of all first sources of information. This heavy reliance on what may be called the local environment was further emphasized by the finding that 39 percent of the users were satisfied with the information obtained from the local environment. One of the recommendations from the *Phase I* study was that personal collections

should be improved in order to decrease the access time to desired information. *Phase II* confirmed that the local environment was the most important first source for information [13, p. 5]. Fifty percent of the users turned to it first and 46 percent of their information needs were met there. Thirteen percent of the total information needs satisfied from the local environment resulted from the search of personal collections, and 5.5 percent from searching departmental files. *Phase II* had more categories, which may account for the lower percentages.

A pilot study of the methods used for literature searching in social sciences research in Belgium suggested that it may be better research management to give subsidies directly to the researcher so he can build up his own collection than to give the money to libraries [16]. Rosenberg's study of information-gathering methods of industrial personnel found that searching one's own personal collection ranked first in the case of research personnel and, in the case of nonresearch personnel, tied for first place with finding material in the same building [7, pp. 8–9].

A survey of 394 persons at two British universities, reported in the University of Durham *Project for Evaluating the Benefits from University Libraries* [17], indicated that the personal collection as a source of information was ranked first by faculty in the arts and the social sciences, and first or second by faculty in the sciences, depending upon the institution surveyed.

Statement of the Problem

Both evidence and informed opinion support the assumption that the ease of accessibility to information affects its use, quite apart from the perceived value of the information. If this is true, then a seeker of information, for whatever purpose, will go first to a source he perceives to be the most accessible to him. In spite of the possibility that the information he needs may exist in a more authoritative form elsewhere, even in a form more intellectually accessible to him than that closer to hand, he will tend to be satisfied with what he finds nearest and not search further. The cost to the user of going beyond his immediate environment may outweigh the cost of using sources that are judged inferior by other knowledgeable people.

In order to provide a guide for the study of the use of personal collections, the following hypotheses were advanced. Since personal collections are the most immediately accessible to a research worker, and have been built up over a period of time from a variety of sources and in a variety of ways to reflect his interests, more materials in these collections will be cited in works published by him than materials in the collections of the library of the institution to which he is attached. Moreover, the larger a writer's personal collection, the greater the number of works he will cite in a published work, since he has at hand more material peculiarly relevant to his interests from which

to draw information. The smaller the personal collection becomes, the fewer will be the citations in published works to material it contains and the heavier will be reliance upon sources farther away. It is possible that the size of personal collections, as of collections generally, may reflect the amount of material available on a particular subject.

If physical accessibility is a major determinant of use of material, then the more inaccessible (in terms of location) materials are, the less they will be used. Investigated in this study, in order of assumed increasing distance, were personal collections, colleague's collections, office collections, departmental libraries, main institutional library collections, other libraries in the same city, and libraries in other cities or countries, which can be accessed by visits or through interlibrary loans.

Since previous studies have revealed that methods of information gathering differ from discipline to discipline, there should be a difference according to discipline in the relation of personal collections to selection of cited references. In this study, the three broad areas of science, social science, and the humanities were compared. Other possible factors acting upon selection of works for citation, such as the part of the country in which authors are located, their experience, and the size of the institutional library collections available to them, were investigated to see if these variables altered the expected results in any way.

Methodology

For this study to be successful, it was necessary to have examples of the use of citations by writers with a wide variety of formal documentation available to them. In all cases, the indicator of use was considered to be the citation attached by a writer to his published work, describing a work which was assumed to have been consulted while his own work was being written. Authors were asked where the cited work was located and for data concerning their personal collections. Data for the study were mainly collected from a questionnaire, though telephone interviews were conducted with one-fourth of the respondents to check on their comprehension of the questionnaire and on the validity and reliability of their reponses to it.

Selection of respondents was limited to individuals who had written articles by themselves. The questionnaire was pretested, and the final version sent out on March 1, 1971.[1]

1. Together with various covering documents, the questionnaire may be examined in the dissertation [18] from which this article is drawn.

Since a comparison and contrast between individuals in different disciplines was desired, source journals of very general scope were selected from the sciences, the social sciences, and the humanities. Table 1 indicates the journal titles selected and the number of articles obtained from each, categorized by the broad subject areas of the study. These areas are so broad, however, that few of the journals chosen cover the entire area. If no journal was available that covered the greater part of an area, then journals from its major subdivisions were selected.

Recency was an important criterion in the selection of journal issues. It was assumed that writers would be better able to remember where references were located if they received the questionnaire as soon as possible after the publication of their article. Therefore, articles from the most recently published issues were selected first; then the selection process continued backward in time until the quota for each area was filled.

A nonrandom quota sampling method was used to select the authors in the study. Most authors writing in a selected journal issue were eliminated owing to considerations peculiar to this study. Authors were not selected independently of each other; all authors in a journal issue who fitted the criteria were selected together.

When the questionnaires were returned, the size of the library at the institution to which the writer was attached was determined from the *American Library Directory* [19].

The number of references per page was adjusted according to an adjustment factor based on the number of words per page to produce a number that would permit comparison of the articles from different source journals having different amounts of text per page. The adjusted number of references per page, rather than total references per article, was used as a measure of reference density.

The section of the questionnaire dealing with personal collections asked for a breakdown of the total size by types of material or, if this was impossible, an estimate of the total size. Most respondents were able to give some sort of estimate of the amount of the various types of material in their collection.

It seemed illogical in attempting to compare the size of personal collections to compare directly 1,000 books and 50 journal articles owned by one individual to the 40 books, 10 government documents, and 1,000 journal articles held by another individual. The totals derived from simple addition took no account of the different amounts of text contained in each category, nor of the different amount of space required for each. It also became apparent that individuals in different subjects build personal collections containing different mixtures of material. Comparison between broad subject areas would be invalidated by this different mixture if only gross totals were used.

In order, then, to permit comparison of collections composed of different

TABLE 1

SOURCE JOURNALS, WITH NUMBER OF ARTICLES

	Volume No.	Issue No.	Date	Articles (*N*)
			Science (100)	
Federation of American Societies for Experimental Biology, *Federation Proceedings*	29	3–6	May/June 1970 November/December 1970	50
National Academy of Sciences, *Proceedings*	66 67	1–4 1–4	May–August 1970 September–December 1970	50
			Social Science (100)	
American Economic Review (American Economic Association)	60	1, 3–5	March 1970 June–December 1970	25
American Behavioral Scientist	13 14	3–6 1–2	January–August 1970 September–December 1970	25
American Political Science Review (American Political Science Association)	63 64	1 1–3	March 1969 March–September 1970	25
American Sociological Review (American Sociological Association)	34 35	6 1–6	December 1969 February–December 1970	25
			Humanities (100)	
Modern Language Association *Publications* (PMLA)	85	1–3, 5	January–May, October 1970	42
American Historical Review (American Historical Association)	75	1–6	October 1969–October 1970	23
Journal of American History (Organization of American Historians)	57	1	June 1970	6
Journal of Philosophy	67	14, 19–21	July 23, 1970 October 8–November 5, 1970	14
American Quarterly (American Studies Association)	22	1, 3	Spring, Fall 1970	15

NOTE.—Total articles (authors) in parentheses.

quantities of different kinds of material, the total number of items in each category was estimated by various methods. A Gross Total for each personal collection was obtained by simple addition of the values in each category. The second method of totaling consisted of transforming the category values into square roots and adding them. This was called the SQRT Total. The

third method transformed the category values into standard scores which were added to produce a STSC Total. The fourth method transformed the category values into base ten logarithms, and then new values were added to form the Log-10 Total. The fifth method used weighted values in each category in the following manner: a book = 1, a journal issue = 1/5, a bound journal volume = 1, a separate journal article = 1/25, a government document = 1, a research report = 1, and a piece of correspondence = 1/25. After weighting, the new values were added to form the Weighted Total.

Results

Out of the 300 mailed out, 178 usable questionnaires were returned. The respondents in the study were almost exclusively affiliated with teaching institutions; only a few were at research or commercial establishments. There was also a large proportion of social scientists and humanists, with relatively few physical and biological scientists. Of the 178 respondents, 175 (98 percent of the total) owned their own collections of material.

Composition of Personal Collections

The respondents' estimates of the size and composition of their personal collections are shown in table 2. The most frequently held materials were books, journal issues, and journal articles. Journal articles included preprints, reprints, and photocopies of articles. The response under journal bound volumes was low, probably because of the expense and inconvenience involved in binding. The low response rate for government documents and research reports may have been caused by the difficulty in separating these two types of material from books when they are interfiled on bookshelves. Correspondence was also low. Some respondents noted that they never saved it; others may have overlooked correspondence in filing cabinets and just reported material they had on shelves. The subscriptions-to-journals category was not included as part of the total size but is shown because the number of subscriptions an individual supports was considered an indication of the importance he places on owning his own material and not having to rely on library subscriptions.

It was obvious from the data that the respondents tended to report estimates rather than actual counts of their personal collections. The telephone interviews confirmed this. Respondents usually counted the number of items on a shelf and then multiplied this quantity by the number of shelves, or counted the material in a folder in a file case and multiplied by the number of folders. In order to get some idea of the amount of error involved in this procedure, nine collections were counted by the investigator and the figures

TABLE 2

SIZE AND COMPOSITION OF PERSONAL COLLECTIONS

	N	Range	*M*	SD
Total size	175	11–41,112	1,257.9	3,949.8
Books	166	2–9,000	475.0	1,200.8
Journal issues	157	1–2,400	158.0	354.3
Journal bound volumes	25	1–600	21.8	138.0
Journal articles	153	3–40,000	219.5	3,792.0
Government documents	62	2–6,000	41.7	975.6
Research reports	72	1–350	43.3	75.6
Correspondence	35	1–1,000	30.0	252.6
Subscriptions to journals	158	1–30	5.2	4.7

NOTE.—Unit of measurement is the physical piece.

compared with those given by the respondents to see if there was a tendency to under- or overestimate and by how much. Two of the respondents whose personal collections were counted overestimated the size of their personal collections while seven underestimated. On the average, the estimated size of the personal collections was 80 percent of the actual size.

It was found that overestimation occurred occasionally in the categories of books and journal issues, but less so in the other categories. Counting confirmed the suspicion that respondents had difficulty in distinguishing government documents and research reports from books. Articles were underestimated the most frequently. They were usually housed in filing cabinets and were more difficult to count than material on shelves. By inspecting the collections, I found that the repondents did have material in all of the categories checked in the questionnaire, and that there was no material in the categories they had left blank, except that occasionally they had but did not indicate government documents or research reports. This suggests that the questionnaires were filled out as accurately as possible, that the variety of material shown, except for government documents and research reports, is correct and that, though subject to error, estimates of the amounts of material were correct in order of magnitude.

Discipline and Personal Collections

In the total population of 175 cases, thirty-nine (22 percent) of the personal collections were located in the home, sixty-three (36 percent) in the office, and seventy-three (42 percent) were divided between home and office. Analy-

sis by discipline of respondents suggested that scientists tended to keep their collections in their offices, humanists tended to prefer their homes, and social scientists tended to split their collections between both locations.

Total size of the personal collection varied, but not significantly, according to the subject the writer was active in.[2] Table 3 shows the contents of the personal collections, divided by discipline. The number of individuals reporting materials in each category is given, with the range, mean, and standard deviation of the distributions. From this table it is clear that there are differences based on discipline in the distribution of material in the personal collections. These differences, particularly in the categories of books and journal articles, are ones that are expected from previous studies: scientists rely heavily on journal articles, while humanists rely heavily on books, and their collections reflect this. Social scientists' collections generally lie in the area between the two extremes.

Several measures of the number of cited works were tested for correlation with size of the personal collection. These were the total number of works cited in an article, the total number of works cited in the article and located in the personal collection, the percentage of the total number of works cited in the article and located in the personal collection. The various methods used to compute size of the collections have already been mentioned. Spearman's rank-order correlations were used because the distributions of collection size were not found to be normal. In all cases the variables were only weakly correlated in the sample as a whole.

Because the population of 175 personal collections included those belonging to writers in three dissimilar disciplines, the population was analyzed to see if the correlations between size of personal collections and number of citations was affected by discipline. In the humanities and the social sciences, as the size of personal collections increased the number and percentage of cited works located in them also increased. In science, however, the relationship was not significant.

The experience of respondents, as reflected by time since achieving the last degree, did not correlate significantly with most methods of computing size of personal collections in science. There was, however, a significant correlation between these variables in the humanities and an even more significant one in the social sciences. It may be inferred that scientists tend to rely more heavily on current material than social scientists or humanists. This may result in more stringent weeding of collections, with size thus remaining relatively constant. The fact that scientists collect more journal articles than scholars in other disciplines may also be related to the size of their personal collections in that journal articles may be considered to have less permanent

2. The mean size of personal collections in science ($N = 48$) was 3,206.8, with a standard deviation of 6,695.8. The mean size of the collections in social science ($N = 72$) was 1,609.8, with a standard diviation of 1,259.7. he mean size in the humanities ($N = 55$) was 2,164.8, with a standard deviation of 2,87[illegible].

TABLE 3

TYPES OF MATERIAL FOUND IN PERSONAL COLLECTIONS, DIVIDED BY DISCIPLINE

Type	Science (N = 48)	Social Science (N = 72)	Humanities (N = 55)
Books:			
N	44	69	53
M	342.7	762.6	1,530.1
SD	567.7	702.6	1,723.5
Range	4–2,720	5–3,000	2–9,000
Journal issues:			
N	39	69	49
M	331.4	250.6	254.0
SD	468.6	234.0	392.2
Range	4–2,400	5–1,200	1–200
Journal bound volumes:			
N	14	7	4
M	122.7	14.1	16.5
SD	171.5	17.9	22.6
Range	10–600	1–50	2–50
Journal articles:			
N	45	67	41
M	2,633.8	393.5	235.2
SD	6,709.7	679.5	373.5
Range	50–40,000	10–5,000	3–1,500
Government documents:			
N	12	41	9
M	35.6	69.1	1,266.9
SD	37.5	74.8	2,414.2
Range	2–120	10–300	6–6,000
Research reports:			
N	14	48	10
M	37.5	78.3	40.3
SD	27.5	84.8	59.8
Range	10–100	1–350	1–200
Correspondence:			
N	12	17	6
M	93.2	166.3	191.0
SD	147.5	260.8	397.2
Range	3–500	4–1,000	4–1,000
Subscriptions to journals:			
N	41	68	49
M	5.5	6.8	5.4
SD	3.7	4.8	5.2
Range	1–18	1–30	1–30

value than books and may, therefore, be more easily discarded.

The size of personal collections is not correlated significantly with the size of institutional libraries in the social sciences and the humanities; it is, how-

ever, significantly positive in science. It appears that scientists with access to larger institutional libraries build larger personal collections. Scientists tend to have greater numbers of journal articles in their collections than do scholars in the other two disciplines, and it seems likely that access to larger amounts of material in the institutional library encourages increased photocopying which leads to larger collections of articles.

In determining the reasons given by respondents in different disciplines for the differences in size and composition of personal collections, one should not neglect to acknowledge the potential effect of inherent differences in the disciplines, such as differences in prevalent methods of research and acceptable standards of reporting research results. It is clear, however, that the possession of personal collections is regarded as necessary in all disciplines. There was almost complete agreement among the respondents as to why this was true.

Reasons for Personal Collections

Forty-five (25 percent) of the 178 respondents were contacted by telephone, briefly interviewed, and asked why they built and maintained personal collections. Only one respondent did not have a personal collection, and he reported that he had not yet started to accumulate one because he was able to rely on the institutional library.

The forty-four with personal collections all reported convenience as the reason for putting effort and money into personal collections. Personal collections were easier to use because they were arranged to meet and reflect individual needs and interests. They were in environments the respondents preferred to work in. Material could be easily added to them. They were completely flexible and responsive. They were more accessible than other collections of material; few barriers existed between the user and his own collection.

It became apparent that personal collections also existed as a reaction to institutional library practices. The respondents generally did not like to use libraries where they could not be certain of getting what they needed when they needed it. The possibility that someone else could be using a sought-for title was irritating. Binding of journal volumes seemed to be done just when they wanted to use an issue in the volume. Many respondents felt quite negative about the arrangement of libraries in relation to their individual needs. Libraries were regarded as providing not nearly as pleasant an environment to work in as the office or home. Many respondents felt they were unable to relax and concentrate in libraries; even in their own carrels there were too many distractions. Interestingly enough, gaps in the institutional library collections were not given as reasons for building personal collections.

The respondents generally realized and even accepted the fact that libraries have to serve many different individuals. They understood the reasons behind elaborate organizations and rules and regulations, but they did not want to accept them. Considering that the respondents were usually faculty members and therefore subject to fewer rules and regulations than the majority of library users, the amount of irritation experienced by other users can only be wondered at.

Another reason occasionally given for the building of personal collections was the professional responsibility of being aware of new developments and ideas in a chosen field. But, of course, this duty could be discharged by using library materials, to which every individual in the study had access; so professional responsibility does not seem a sufficient reason to explain the creation and development of personal collections. A few of the respondents expressed dissatisfaction with the lack of organization in their own collections and the amount of time they had to expend on them. But this irritation was not enough to cause them to consider giving them up.

Characteristics of Cited References

The preceding pages have described some charcteristics of personal collections and discussed some reasons for their development. A major aim of the study was to examine the use of these personal collections and of other collections in relation to materials cited in papers.

The location data of the 5,175 works cited by the 178 respondents in their articles were taken from the returned questionnaires and are given in table 4, which shows clearly that personal collections account for the largest number (and percentage) of works cited and that as distance of the author from a location increases, the proportion of works cited in that location tends to decrease. Colleague's collection and office collection were found to contribute very little to the total picture, even when combined. Seventy-four percent of the respondents reported that they had access to office collections, but it appears that these were usually small and often contained duplicate or discarded material from other collections. Some of the respondents reported that office collections were assembled more for the use of graduate students than of faculty members.

Only sixty-three (36 percent) of the respondents reported that departmental libraries were available to them. Thirty-three of these (52 percent) were in the same building as the respondent's office, fourteen (22 percent) in another building, and sixteen (25 percent) actually in the main institutional library.

Libraries located in the same city as the main institutional library were rarely used as sources of cited works. No data were gathered as to the reasons for this low use, but because many of the respondents were associated with institutions that had the largest libraries in their vicinity, they may have tended to ignore nearby but smaller libraries as being unlikely to have mate-

TABLE 4

REPORTED LOCATION OF WORKS CITED BY RESPONDENTS

Location	N		%	
Personal collection	3055		59.0	
Colleague's collection	83	110	1.6	2.1
Office collection	27		0.5	
Departmental library	122	1,320	2.4	25.5
Main institutional library	1,198		23.1	
Other libraries, same city	110		2.1	
Other libraries, other cities and countries (visit or interlibrary loan)	530		10.2	
Didn't remember	10	50	0.2	1.0
Other	40		0.8	
Total	5,175		99.9	

rial not already available in their institutional libraries. Interlibrary loan, a separate category on the questionnaire, was combined with libraries in other cities and countries, since only 38 (0.7 percent) cited works were secured through interlibrary loan procedures.

The location of only 10 cited works was not recalled. The 40 references in the other category included those resulting from private communications, as well as those resulting from notes made from archives.

It is apparent from table 4 that the only locations which were important as sources of cited works were (1) the personal collection, which accounted for 59 percent of them, (2) the departmental–main institutional library which together accounted for 25.5 percent, and (3) libraries in other cities and countries, with 10.2 percent. Together these three locations contained 94.7 percent of the cited works. One may conclude that because the number of citations to works in these three main locations decreased as their physical accessibility decreased physical accessibility is a determinant in the selection of works to be cited.

Table 5 shows the location of cited works analyzed by discipline. Several location categories have been combined. Respondents in the humanities were significantly different from the other respondents in two respects. They cited almost as many works located in the main institutional library as in their personal collections, and a substantial proportion of their citations were to works found in libraries far removed from their home institution.

Material in Personal Collections and the Institutional Library System

The data obtained in this study are interesting in relation to the formal, institutional library system. The interlibrary loan system in the United States potentially links all institutional libraries together. Inadequacies at one insti-

TABLE 5

LOCATION OF CITED WORKS, BY DISCIPLINE, WITH COMBINED CATEGORIES

	Science	Social Science	Humanities	Total
Personal collection	983 (73.9)	1,366 (73.3)	706 (35.8)	3,055 (59.0)
Departmental–main institutional library	278 (20.6)	366 (19.6)	676 (34.2)	1,320 (25.5)
Libraries, other cities and countries	17 (1.3)	33 (1.8)	480 (24.3)	530 (10.2)
All other	57 (4.2)	100 (5.2)	113 (5.6)	270 (5.2)
Total	1,335 (100.0)	1,865 (99.9)	1,975 (99.9)	5,175 (99.9)
		$\chi^2 = 1{,}035.81$ (6 df) $p < .001$		

NOTE.—Percentages in parentheses.

tution can eventually be compensated for by other institutions. In principle, a researcher has access (though not instant or, in fact, certain access) to most of the material in this country. Interlibrary loan involves some expenditure of time, but little of money. In this study, the utilization of interlibrary loan as a means of acquiring material from other libraries, however, was responsible for only 38 (or 0.7 percent) of the cited references. One must conclude that either the libraries in the institutions of which respondents were part were adequate, or that the use of interlibrary loan was apparently not considered by the respondents as an important method of overcoming inadequacies.

If the development of personal collections were a response to inadequacies in the size of institutional libraries, one would expect negative correlations between the size of personal collections and the size of institutional libraries. As noted before, this did not occur. Another reason for not accepting the inadequacies of institutional libraries as of primary importance in the growth of personal collections emerged from an investigation into the location of the works cited in the articles written by a group of forty-five respondents (a different group from that interviewed). Library holdings were physically checked in the institutions to which they belonged.

These forty-five respondents represented 25 percent of the total response group and their articles were responsible for citations to 1,162 works; this was 22 percent of the total of the works cited in the study. Five science articles cited 173 works, or 13 percent of the total in science. Twenty-two social science articles cited 458 works, or 24 percent of the total in social science; and eighteen humanities articles cited 531 works, or 27 percent of the total in the humanities. The forty-five respondents indicated on their questionnaires that 21 percent (244) of the works they cited were located in either a departmental library or in the main institutional library when their articles were written and were found to be there when the investigator checked. This percentage is slightly less than the percentage found in the total population (25.5).

Of the 1,162 works cited by this group, 673 (58 percent) were found to be in personal collections when the articles were written (as compared with 59 percent in the case of the whole population of 178). The library check disclosed that 592 of these (88 percent of the 673 works cited) were also located in the institutional library system. There was no way of being entirely certain that every cited work located in the institutional library system was actually there when the articles were written, but it is doubtful that much error was caused by this. Nor is it certain when the works cited were added to the personal collection—before, for example, or during the writing of the article.

Table 6 lists the number of articles and the number and percentage of cited works found in the personal collection that could also be found in the institutional system. The highest percentage occurred in the sciences. In this case only 8 percent of the cited works located in the personal collection were not also found in the institutional library system. The social sciences had a high percentage of duplication also. It is not surprising the percentage of duplication was lowest in the humanities. Scholars in the humanities more often cited unique material than did those in the other two disciplines. The works they cited were not as likely to be current trade books or widely distributed journals available in most libraries, but were more likely to be items held only by one or a few libraries (which were in other cities and countries). It should be noted that the humanists were not any more often located at institutions with smaller libraries than were the other two groups.

Summary

The respondents in this study may not have been entirely representative of the population of researchers. The original sample was not a random one, and the respondents differed significantly from the nonrespondents in some

TABLE 6

DISTRIBUTION OF WORKS CITED BETWEEN PERSONAL COLLECTIONS AND INSTITUTIONAL LIBRARY SYSTEMS

	Articles	Citations Checked	Cited works in Personal Collections	Cited Works in Both Personal Collections and Library Systems
Science	5	173	131 (76)	121 (92)
Social science	22	458	361 (79)	324 (90)
Humanities	18	531	181 (34)	147 (81)
Total	45	1,162	673 (58)	592 (88)

NOTE.—Percentages in parentheses.

characteristics. Also, a much higher percentage of respondents had personal collections than had been found in previous studies. This could be the result of the composition of the response group, which contained a larger number of social scientists and humanists and of individuals attached to teaching institutions than was the case in earlier studies.

The estimate of the size of their personal collections given by the respondents was fairly reliable, and the population is large enough for a general picture of personal collections to emerge. Although the size of personal collections varies greatly from individual to individual, their composition does not. Books, journal issues, and journal articles comprise the majority of the contents of all collections. The proportion of these three types of material varies with discipline, as does the location of the personal collections. It is possible that the location in which a personal collection is kept is influenced by the preponderant type of material it contains, so that the influence of discipline on location may be indirect rather than direct.

Personal collections were found to exist apparently in spite of institutional libraries. Whether the institutional library was large or small seemed to have little bearing on the existence and size of personal collections except in the sciences. The positive correlation between size of the personal collection and size of the institutional library in the sciences probably but not necessarily indicates a direct relationship.

The inadequacy of institutional libraries as a reason for the establishment and maintenance of personal collections does not appear to be as important as physical accessibility. Personal collections appear to contain very similar materials to libraries. But personal collections are generally much smaller and probably lack much of the diversity and depth that are the strengths of major institutional libraries. It seems clear, however, that they are preferred as sources of works to be cited. They may be easier to use because they are smaller and not as complex as institutional libraries. They are obviously adequate for the special needs of their owners. It appears that personal collections exist apart from the institutional library and that changes in the library's collections and procedures have slight effect upon them.

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THE BIBLIOMETRIC DISTRIBUTIONS

Abraham Bookstein

One of the more surprising findings in the information sciences is the recurrence of a small number of frequency distributions. In this paper, these distributions are described, and a point of view is adopted that allows us to understand them as being different versions of a single distribution. The empirical distributions are shown to be special cases of a single theoretic distribution. It is found that when random fluctuations are introduced, the distributions are not strongly influenced.

One of the most remarkable discoveries of information science is the recurrence, in a wide variety of different situations involving information flow, of a small number of basic distributions. Because of differences in what is investigated and in how the results are expressed, the basic similarity between the distributions has not always been appreciated, although excellent reviews do exist [1]. It is the purpose of this paper to summarize several of the more influential distributions, chosen both because of their intrinsic importance and because they illustrate all the basic forms the expression of these distributions has taken in the literature, and to indicate how they relate to each other. In particular, it will be seen that all of these distributions are, to a good approximation, special cases of a single general class of distributions which has been proposed on the basis of very different theoretical arguments by Mandelbrot [2; described in 3, chap. 4], Bookstein [4, 5], and Simon [6]. The first two of these theoretical approaches are deterministic in nature, while Simon's approach is intrinsically stochastic. Finally, this paper will consider how the introduction of randomness influences the form these distributions can take.

The Basic Distributions

Lotka's Law

Among the earliest reports of regularities in the flow of information is the paper by Lotka [7] describing the law now bearing his name. Lotka examined two populations of chemists and found that the number of chemists publishing n papers is proportional to $1/n^2$ in each.

[*Library Quarterly*, vol. 46, no. 4, pp. 416–23]

Zipf's Law

About a decade later, and then more thoroughly in 1949, Zipf [8] proposed that the occurrence of words in text could be described by a similar distribution. He found that if words are ranked according to their frequency of occurrence, the rth ranking word will appear approximately A/r times, for some constant A. This law is often expressed in the following cumulated form: the number of occurrences of the r most frequent words in text is proportional to $\ln r$. This result is obtained by approximating the exact number of occurrences,

$$\sum_{n=1}^{r} 1/n$$

by the integral,

$$\int_{1}^{r} \frac{1}{x}\, dx = \ln r \, .$$

Actually, a better approximation results if we change the limits of integration slightly and estimate

$$\sum_{n=1}^{r} 1/n$$

by

$$\int_{1/2}^{r+1/2} \frac{1}{x}\, dx = \ln (r + 1/2) + \ln (2) = \ln (1 + 2r) \, .$$

The second approximation results in an error of about 10 percent for $r = 1$, with the relative error getting smaller for larger r. The more usual approximation, $\ln r$, gives the patently incorrect value of 0 for the number of occurrences of the most frequent word. It has been noted that plots of word frequency against lognormal rank deviate from straight lines, especially for small values of the rank. In part this may be explained by $\ln r$ being a poor approximation to

$$\sum_{n=1}^{r} 1/n$$

for small r. As r increases, however, $\ln r / \ln (2r + 1) \rightarrow 1$. Thus, if we have a true Zipf population, that is, one in which Zipf's law holds exactly, the function, $\ln r$, would approximately describe the cumulative occurence of words; $\ln (2r + 1)$, still an approximation, would do better, and the two would converge for large r.

Bradford's Law of Scattering

One year after Zipf first published his law, Bradford [9] described his law of scattering as follows: suppose one takes a set of journals and ranks them in order of the number of articles they carry in a specific discipline. Then if one creates a core of journals basic to the discipline, composed, say, of j journals, and finds a articles relevant to the discipline in those journals, then one requires kj journals for an additional a articles, k^2j more journals for yet another a articles, and so forth, multiplying the number of journals in a zone by the constant k to find how many additional journals are required to gain a more articles. Vickery [10], and later Leimkuhler [11], showed that the number of articles in the highest r-ranking journals is given approximately by $A \ln(1 + Br)$, where A and B are constants. More precisely, Bradford asserted that a core of journals can be found for which his law can be observed to hold. Leimkuhler's cumulated version of the law was derived to agree exactly with Bradford's when evaluated for those journals at the boundary of zones. Between those values describing zone boundaries, and particularly for noninteger values of j, it acts as an interpolating formula. Bradford's law itself makes no statement at all about these journals—in that sense the law as originally formulated is incomplete. On the other hand, if the distribution $A \ln (1 + Br)$ accurately describes a population, Bradford's law will hold no matter how we choose the core. For the purposes of this paper, we will accept the stronger formulation and consider the Bradford and Leimkuhler-Vickery versions to be alternative descriptions of the identical population.

The three laws given above are the ones that have appeared most often in the information science literature. However, other people have found that similar distributions also describe such diverse phenomena as the distribution of population among cities, the use of books in a library, the use of subject headings to describe a set of books, and many others as well [1]. It is thus of interest to consider how these laws relate to each other.

Comparison of the Empirical Distributions

Studying these findings concerning empirically observed distributions, one is struck by at least three things:

1. "Nice" distributions describe complex situations. In each case described, one has a large number of entities, each with its own idiosyncrasies, acting more or less independently; yet when the consequences of their activities are brought together, the result can be described by a distribution having a very simple form.

2. The distributions persist. For example, Lotka found that the distribution describing one population of chemists over a five-year span was exactly the same as the one describing another population of chemists over a lifetime.

One would have expected, a priori, to have a different distribution in each situation.

3. All of these distributions are almost equivalent. To see this, we must first note that all of the distributions describe situations that are formally the same. In each case we have a set of entities (for example, chemists, words) producing events (publications, occurrences) over some dimension of extension (time, length of text); and in each case the distribution describes the number of occurrences of events over a fixed interval of that dimension. Under these conditions it is possible to describe the same distribution in at least four distinct ways [5]; these modes of description are represented above by the distributions of Lotka, Zipf, Bradford, and Leimkuhler.

Kendall [12] was perhaps the first to suggest that the Zipf distribution and the Bradford distribution were almost equivalent. On the basis of the above discussion we see that the (approximate) cumulated form of Zipf's law, $\ln(1+2r)$, is a special case of the (exact) cumulated form of Bradford's law, $\ln(1+Br)$, and that they agree for large r. The form of Bradford's law that to a good approximation corresponds to the noncumulated Zipf law states that the rth ranking word should occur $A/(1+Br)$ for constants A and B; this contrasts with Zipf's A/r formula. These again agree for large r, but diverge for small values of r. Other writers [5, 13] have generalized this remarkable finding and have shown that Lotka's law and Bradford's law are different approximate descriptions of the same basic distribution, and that, at least for larger values of r, both agree with Zipf. It is as if while Zipf was examining the elephant's leg, Bradford was describing its trunk, and Lotka another part of its anatomy. The distributions are approximately the same; it is only the entities and events that differ.

Why did these different workers choose different descriptions? To some extent personal preference must play a part and also which end of the distribution seemed most natural to its discoverer. When studying journals, the core journals are the ones that stand out; they are the ones the experts are familiar with. The other end of the distribution, where each journal contains only 1 or 2 relevant articles, is hard even to define. Questions as to whether a search is complete or whether a given article is or is not relevant become very important here. Both Zipf's and Bradford's laws emphasize the higher-ranking entities. Lotka, on the other hand, begins with the low end. This was natural in his own study. His population was well defined in terms of the abstracting service he examined, and there happened to be more scientists at the low end and the data about them were easier to collate. The scientists at the upper end, on the other hand, were determined by chance when Lotka decided to study just 2 letters in *Chemical Abstracts*.

In all of these laws, the cumulated forms have the advantage of being more tractable mathematically. They relate, for example, journals and articles by means of a very nice, smooth, and well-understood function. The cumulated

form helps cancel out fluctuations that appear when real data are matched against the noncumulated form. Nevertheless, some people will find the noncumulated forms easier to relate to empirical data, perhaps because of the difficulty of fitting such data to some of the parameters of the cumulated versions. Moreover, some people are uncomfortable with a distribution that allows variables that can only have integer values to be represented by continuous variables.

A noncumulated distribution, such as that appearing in Lotka's law, may also be interpreted more directly. For example, whereas Leimkuhler's distribution, taken strictly, does not permit two or more journals to have the same number of articles, Bradford's own description of Bradford's law is not inconsistent with the observation that different journals may have identical numbers of articles relevant to a discipline. The Lotka form explicitly allows several journals to have the same number of relevant articles. This question of interpretation becomes a problem when, given, say, the $A \ln (r)$ distribution, we are asked such questions as how many articles were published in the rth ranking journal. Is this quantity given by $A \ln r - A \ln (r-1)$, or by $A \ln (r+½) - A \ln (r-½)$, or yet some other quantity? As a practical matter, the results are close to each other, at least for large values of r, but the difficulty of interpretation can be discomforting. On the other hand, the noncumulated distributions, although they make directly interpretable statements, are difficult to manipulate.

Theoretical Distributions

Given the ubiquity of the bibliometric distributions and the quantity of literature discussing them, it is surprising how little theoretical attention has been given them. Important work has been carried out relating the distributions to each other, as described above, interpreting these distributions in terms of notions of human behavior, and considering practical applications of them. Much sparser are attempts to find why such distributions occur in the first place and their most important analytical properties. It is, therefore, of interest to describe the distributions that were derived on theoretic grounds, and to see how they relate to each other and to the empirically observed distributions.

Deterministic generalizations of the bibliometric distributions, derived on theoretical grounds, are offered by Mandelbrot [3] and Bookstein [4, 5]. Mandelbrot, using a model of word storage in the human mind and information theoretic considerations, derived the following law: $f(r)$, the number of occurrences of the rth ranking word, is proportional to $1/(1+\beta\, r)^{\gamma}$ for β and γ constant. Bookstein, taking a very different approach using simple model populations, showed that the only type of bibliometric law that could at the

same time be true for all lengths of text, time, etc., took the following form: the number of words occurring n times is proportional to $1/n^{\alpha}$, for some constant α. He further showed that this distribution is, to a very good approximation, equivalent to the general Mandelbrot expression if α is free to take any value. On the other hand, for $\gamma=1$ (or $\alpha=2$), these distributions are equal to the Bradford-cumulated-Zipf-Lotka laws; and if β is allowed to get very large, these approach Zipf's original distribution. Thus the Bradford, Leimkuhler, and Lotka laws, which are virtually equivalent to each other, and also the Zipf law, are all special cases of the forms derived by Mandelbrot and Bookstein on theoretical grounds.

Stochastic Considerations

The final version of the bibliometric laws I shall consider was derived by Herbert Simon [6]. Simon proposed a stochastic model which, among other things, described word production in text. In Simon's model words are picked at random, and the probability of a word occurring is proportional to the relative frequency of its previous occurrences. On the basis of this model, Simon concludes that the number of words in text that occur n times is proportional to $1/[n\ (n+1)\ .\ .\ .\ (n+k-1)]$ for some constant integer k, or, more generally, to $\Gamma\ (n)/\Gamma\ (n+\alpha)$ for α, a nonintegral constant. Since for n much larger than α this is approximately $1/n^{\alpha}$, this result approximates the Bookstein, and thus the Mandelbrot, version of the bibliometric laws, at least for large values of n. An advantage of Simon's development, however, is that it explicitly recognizes the importance of random effects.

In most of the earlier work discussed above the meaning of the independent variable is left ambiguous. How, for example, are we to interpret the statement that 2½ journals have 80 relevant articles? Is there any way to include within the framework of our development the fact that our predictions only approximate the empirical observations? One approach is to consider that the "prediction" is an expected value and that the empirical findings include the effects of random fluctuations. In Simon's paper, these fluctuations are an essential component of the model, but we can include them in the deterministic form as well.

In an earlier paper [5] I examined model populations in which events (such as publications) occurred in a uniform manner; for example, a person tending to publish twice a year published exactly twice every year. This assumption can be relaxed so that individuals can be allowed to publish with some degree of variability—that is, if a person is expected to publish λ papers in a particular time interval, we assume that the actual number of publications is given by some distribution with a mean of λ. To try to understand the consequences of this assumption, let us assume that this distribution is the Poisson

distribution, $f_p(n/\lambda)$. This is a distribution describing a random variable that takes only nonnegative integral values and is mathematically tractable. Considering this as a special case will give us some insights into the effect of variability.

Accepting this interpretation and assuming that A/n^{α} gives the number of people from whom we expect n publications in the time interval examined, we can then expect to find

$$\int_0^{\infty} \frac{A}{\lambda^{\alpha}} f_p(n|\lambda)d\lambda = \frac{A}{n!} \int_0^{\infty} e^{-\lambda}\lambda^{n-\alpha}d\lambda$$

people publishing n papers in that interval, if we take variability into account. Recognizing the integral as the gamma function we find the expected number of publications to be $A\Gamma\ (n-\alpha+1)/\Gamma\ (n+1)$, provided $n \geq \alpha$. For $\alpha = 2$, this becomes $A/n(n-1)$.

We can make three immediate observations:

1. Once again we find A/n^2, or, more generally, A/n^{α}, to be a good approximation of the number of people publishing n papers, for large n. Thus, the introduction of variability does not seem to affect strongly the conclusions we came to on the basis of a simple deterministic model. In earlier papers, I showed that the $1/n^{\alpha}$ law seemed resistant to various changes in the model populations from which it was derived. This indicates that variability can be included in the list of modifications to which this distribution is immune, at least for large values of its variable.
2. This model suggests that variability will cause the number of people that produce n articles to be larger than in the deterministic case, but this effect will be small. As n gets closer to α, the above approximation will become poorer.
3. Interestingly enough, in both Simon's model and mine, n enters as a truncated factorial. Though these are not identical, they converge at large n; I found that other simple distributions give the same results.

Summary

In this paper, I have examined a number of the bibliometric distributions and tried to make a precise statement as to how they relate to each other. Part of the confusion surrounding these distributions was shown to arise from the nature of the approximations that have been made in going from one form to another. In the course of this discussion I suggested a form of the cumulated Zipf law that is a better approximation to the noncumulated form than the usual ln r and which directly expresses a Zipf population as a special case of a Bradford population. I also described two other, approximately equivalent, distributions that have as special cases both the Bradford distribu-

tion (and therefore the Lotka and cumulated Zipf distributions) and the Zipf distribution as originally described. Furthermore, when stochastic effects were introduced into a deterministic model in which Lotka's law is valid, for example, a model of journal article production, I found that the Lotka distribution results again, at least for large values of n. The Lotka distribution with arbitrary exponent, or a distribution equivalent to it, may act as a link between the special cases appearing in the literature. In [5] it is suggested that for a distribution of the form discussed here to be discovered at all, it may be necessary for that distribution to take the form appearing in Lotka's law, or a form equivalent to it.

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THESES AND DISSERTATIONS ACCEPTED BY GRADUATE LIBRARY SCHOOLS: 1974 THROUGH DECEMBER 1975

Jonathan S. Tryon

This report follows the format begun in 1970–71 by including both theses and dissertations in a single list under each school. Doctoral dissertations are starred to facilitate identification.

Tables 1 and 2 give a statistical summary of the past four reporting periods. In his report for 1973–74 Dean E. J. Humeston, Jr., interpreted the statistics for the master's thesis as clearly indicating the demise of this research device. The figures from the latest reporting period indicate that he may have been a bit premature. There has been a slight increase in the total number of theses reported and, interestingly, five schools report theses for the first time while only two, which formerly reported theses, fail to do so this time. This hardly indicates a trend back to the general use of the thesis, for in fact only two schools see the thesis as important enough to make it a requirement. With other schools the thesis will probably linger on as an occasionally useful but seldom used tool.

The number of doctoral dissertations shows a decline for the first time following years of steady and significant growth. Simple speculation suggests that the decline, not large in any event, results from changes in the availability of scholarship funds and reflects a perception of a decreasing need for doctorates. A thorough study, however, would have to be made to establish the facts in the matter. Obviously, a small decline in one reporting period does not establish a trend. At any rate it is interesting to note that, while nearly half the schools show a modest reduction in the number of dissertations reported, a number of schools report dissertations for the first time. As true now as in the past, a few schools dominate the output. In the current reporting period three schools—Pittsburgh, Florida, and Indiana—provide over 50 percent of the dissertations reported.

The subject matter of both theses and dissertations is diverse, and no real trend seems to emerge. Master's theses reflect a greater interest in children's literature and school libraries than in other subjects, while studies of the academic library clearly predominate in the research of the doctoral candidates. In the 1973–74 report Humeston also noted an emphasis on the academic library but in addition found a marked interest in the field of bookmaking and publishing. This latter interest has not been sustained through

[*Library Quarterly*, vol. 46, no. 4, pp. 424–36]

the current reporting period. Subjects for research evidently shift with the tenor of the times, and only the academic library endures as a topic for continuing analysis.

TABLE 1

MASTER'S THESES, 1968–75

School	1968–69	1970–71	1972–73	1974–75
Alberta	0	0	0	2
California, Los Angeles	0	1	0	0
California State, San Jose	0	0	24	5
Catholic	90	0	0	0
Chicago	61	58	68	68
Drexel	15	7	0	0
Emory	1	1	0	1
Emporia Kansas	0	0	0	3
Indiana	1	0	0	0
Iowa	0	0	1	1
Kent	10	4	0	4
Long Island University, C. W. Post Center	0	111	9	0
Mississippi	18	0	0	0
SUNY Albany	0	0	0	1
SUNY Geneseo	0	1	0	1
North Carolina	15	0	0	0
Peabody	2	0	3	6
Southern Connecticut	26	31	0	22
Syracuse	2	0	0	0
Texas Women's University	0	0	0	1
Washington	0	0	0	1
Western Michigan	1	6	4	0
Wisconsin—Madison	1	3	0	1
Total	243	223	109	117

UNIVERSITY OF ALBERTA, SCHOOL OF LIBRARY SCIENCE, EDMONTON, ALBERTA

ANIEBUE, UCHENNA WILSON. "A Survey of Collection Building Techniques of Seven Western Canadian University Libraries." 1975.

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UNIVERSITY OF CALIFORNIA, SCHOOL OF LIBRARIANSHIP, BERKELEY, CALIFORNIA

*BELL, ROBERT EUGENE. "A History of the Grabhorn Press, San Francisco." 1974. (Ph.D.)

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TABLE 2

DOCTORAL DISSERTATIONS, 1968–75

School	1968–69	1970–71	1972–73	1974–75	Total
California, Berkeley	0	5	6	8	19
Case Western Reserve	0	6	3	2	11
Chicago	2	9	6	5	22
Columbia	9	9	13	3	34
Florida	0	5	11	11	27
Illinois	7	11	8	2	28
Indiana	2	8	12	13	35
Maryland	0	0	1	3	4
Michigan	3	8	5	1	17
Minnesota	0	0	0	4	4
North Texas State	0	0	0	1	1
Oklahoma	0	0	1	0	1
Peabody	0	0	0	1	1
Pittsburgh	2	16	14	26	58
Rutgers	5	8	7	6	26
Southern California	1	2	7	2	12
Syracuse	0	0	0	1	1
Texas Women's University	0	0	0	2	2
Toronto	0	0	0	1	1
Wisconsin—Madison	0	1	9	5	15
Total	31	88	103	97	319

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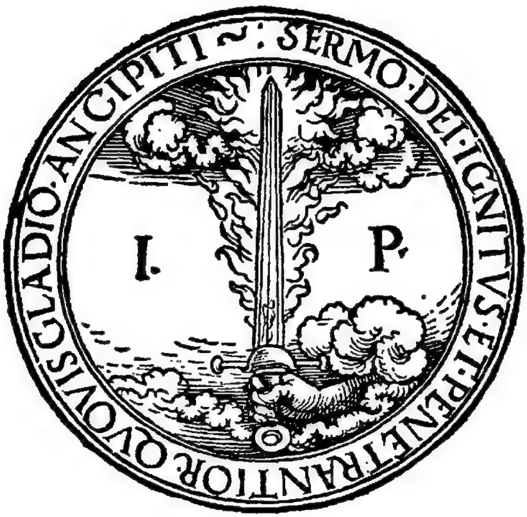

THE COVER DESIGN

Born in Langendorf bei Hammelburg, Johann Petreius studied at the University of Basel where he took a bachelor's degree in 1514 and a Master of Arts in 1517. In 1519, having turned to the printing trade, he served as corrector of the press to Adam Petri, to whom he was related and who printed in Basel from 1507 to 1527. By 1523 Petreius was a citizen of Nuremberg where he conducted a press from 1524 until his death in 1550. During this time he published over 800 books. Reformation tracts predominated in his list, but he also published music, single songs as well as hymnbooks. After his death in 1550 his son-in-law, Gabriel Hain, carried on the business in the Ämterbuchlein house, one of the two that Petreius owned in Nuremberg. His nephew, Andreas Petri (also known as Peter Anders), worked for thirty years for Petreius and Hain in Nuremberg before establishing his own shop in 1556 at Eisleben, where he used the Petreius printer's device.

Johann Petreius's printer's device featured a two-edged sword shooting forth flames and held upright by a hand emerging from a cloud. The variant shown here was enclosed in a circular frame and the sword flanked by the printer's initials, I.P. The Latin biblical text from Hebrews 4:12 is rendered in English as "The word of God is a fire and more penetrating than any two-edged sword." The device and the verbal mottoes have been held to represent the uncompromising position of an adherent of the new learning. They are reminiscent of the device and motto of the Petris of Basel, from whom he had learned the printing trade. They used a hammer striking fire from a rock with the motto: "Is not my word like fire, like a hammer that shatters stone?" (See "The Cover Design," *Library Quarterly* 35 [January 1965]:

61). At the time they used that device, the Petris of Basel were also Reformation printers.

The device reproduced here appeared in *Galli theologi* by François Lambert published by Petreius at Nuremberg in 1524. Heinrich Grimm in his *Deutsche Buchdruckersignete des XVI. Jahrhunderts* (Wiesbaden: Guido Pressler, 1965) has reproduced a smaller variant of this framed device that appeared in 1526 and lacked the periods after the initials. He attributes the design to Peter Flötner, an engraver who worked in Nuremberg from 1523 to 1546.

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ENCYCLOPEDIC GUIDES TO THE STUDY OF IDEAS: A REVIEW ARTICLE

Suzanne Selinger

The Great Ideas: A Syntopicon of Great Books of the Western World. MORTIMER J. ADLER, Editor in Chief. 2 vols. Chicago: Encyclopaedia Britannica, 1952.

The New Encyclopaedia Britannica. Vol. 1: *Propaedia: Outline of Knowledge and Guide to the Britannica.* MORTIMER J. ADLER, Director of Planning. Chicago: Encyclopaedia Britannica, 1975.

Dictionary of the History of Ideas: Studies of Selected Pivotal Ideas. PHILIP P. WIENER, Editor in Chief. 5 vols. New York: Charles Scribner's Sons, 1973–74.

Apparently objective encyclopedic reference works can embody implicit bias in format and in choice and presentation of subject matter in interesting ways. Three important reference tools in the study of ideas and their history are the *Syntopicon* of the *Great Books of the Western World* series, which appeared in 1952; the more recent *Propaedia* of the new fifteenth edition of the *Encyclopaedia Britannica* of 1975; and the *Dictionary of the History of Ideas* of 1973–74. A comparison of them will illustrate the problem of bias or subjectivity and suggest ways of dealing with it.

Mortimer Adler, the editor of the *Syntopicon* and director of planning of the *Encyclopaedia Britannica*, conceived of the two approaches to ideas which these works reflect. As one would expect from the work of one man over two decades, the two works exhibit both continuity and change. Both the *Syntopicon* and the *Propaedia* are comprehensive. They purport to cover all the main ideas in all the liberal arts, including science and literature. They are both highly systematic instruments, designed to prepare the user before he actually encounters the full treatment of the ideas.

The *Syntopicon* is the access tool to the 51 volumes of text in the *Great Books of the Western World* series, which represents seventy-two authors from antiquity to the turn of the twentieth century. The *Syntopicon* is divided into 102 alphabetically arranged topics. An introductory essay for each topic is provided, and this is followed by a very detailed outline breaking down each topic into a total for all topics of 2,987 subtopics. The relevant passages in the *Great Books* (and also the Bible) are listed for each subtopic. Thus the *Syntopicon* literally creates histories of ideas. It assembles references from the whole range of *Great Books* authors; it enables the reader to isolate a passage and gives him the choice of tracing the idea in other authors or placing the idea in the wider context of a man's whole body of thought.

The *Propaedia* represents a break with traditional encyclopedia making. It

is 1 of 3 parts; the other 2 are the 10-volume *Micropaedia*, a ready-reference tool and index, and the 19-volume *Macropaedia*, a series of alphabetically arranged monographic articles. The *Propaedia* is the systematic introduction to the articles in the *Macropaedia* and it is more systematic even than the *Syntopicon*. It divides the realm of knowledge into ten parts. Starting with the physical universe, it ranges through man, society, the arts, and on to knowledge itself. Like the *Syntopicon*, there are subdivisions with detailed outlines of the broader whole, and there are citations to passages in the *Macropaedia*. Adler is explicit that the *Propaedia* is to be considered as a circle, not a hierarchy of learning.

There is, however, a difference between the *Syntopicon* and the *Propaedia*. The essays provided in the *Syntopicon* are unsigned and their styles are strikingly alike. The same impersonality characterizes the outlines in the *Propaedia*, but the essays prefacing these outlines are signed and are given bold, arresting, programmatic titles bringing to mind the most controversial issues of twentieth-century thought. The anonymity and stylistic uniformity of the *Syntopicon* bespeak a conception of reference tools as objective instruments for dispensing facts; the *Propaedia* suggests the possibility that reference tools maybe subjective and interpretive.

The *Dictionary of the History of Ideas* is traditional in format. It consists of 4 volumes of signed articles, alphabetically arranged, with a fifth index volume. In the preface its editor, Philip Wiener, proclaims an unusual policy of overlap, introduced because ideas frequently migrate into new, sometimes unexpected fields, for the implications of an idea are not always apparent to its originator. Moreover, different ideas, interacting across fields, may produce constant change. Because there can be nothing final in the realm of ideas, and because there is no universal scheme comprehending all knowledge, Wiener gave the *Dictionary* the subtitle *Studies of Selected Pivotal Ideas*. Yet this leads to a problem in that selection can be systematic, and there is much to suggest arbitrariness and even idiosyncrasy in the *Dictionary*. It contains articles on such unexpected subjects as "Ambiguity as Aesthetic Concept" and 2 separate articles on the basically indistinguishable subjects of Renaissance humanism and the Renaissance idea of the dignity of man.

The three works under study exhibit interesting differences in the emphasis that seems to be given to various ideas. A simple count of topics in the *Syntopicon* demonstrates that scientific topics like "Nature," "World," "Causality," "Physics," and "Mechanics" far outweigh nonscientific topics like "Sin" or "Metaphysics," and within both types of topics, key figures like Aristotle and Aquinas far outweigh Plato and Augustine. The largest single cluster of figures are the scientists, and the few philosophical scientists, such as Pascal and Goethe, while represented, are rarely referred to in the "pure" science sections.

The *Propaedia*, the circle of learning that can theoretically begin anywhere, chooses to begin in its printed appearance with science. From the universe we

move to life, from life in general to man, then man in society, and then man in his various activities and interests. Philosophy does not have a separate section; it is a subsection of part 10, "Knowledge." While it should immediately be noted that the *Macropaedia* articles are by no means preponderantly scientific, it is clear from the weighting of topics that the values of the *Propaedia*, the systematic introduction to it, are.

In contrast, the *Dictionary of the History of Ideas* does not seem to emphasize science-oriented ideas. While the preliminary "Analytic Table of Contents" begins with ideas about the universe, it explicitly includes philosophers, artists, and the makers of myth and moves quickly to ideas about art and literature even before society. And yet it is not a one-sided, humanities-oriented obverse of the *Syntopicon*; its historical emphasis, for example, lies equally with the Renaissance and the Scientific Revolution. In fact, counting index references reveals far more Newton than any single Renaissance Platonist; more Aristotle than Plato on nature (although there is a total of 11 columns on Plato himself and 10 on Aristotle). There are 4 columns on Augustine and 3 on Aquinas; 7 columns on positivism (in the nineteenth and twentieth centuries) and 2 on existentialism; and a great deal in the nature column on Newton and on man-machine, progress, and Skinner, as well as a great deal on romanticism, chain of being, and symbolism.

An examination of the methodology of one of the chapters in the *Syntopicon* that is not devoted to an exclusively scientific topic sheds much light on the whole. The chapter on "Mind" omits Renaissance thinkers from the subsection on "The Relation of Reason to Will, Desire, and Emotion" despite the revolutionary Renaissance rejection of medieval intellectualism. It includes Plato, Aquinas, Darwin, and Freud in the same subsections despite the radically different connotations and emphasis of the term "mind" in the thought of each. This is the "great conversation" which the *Syntopicon* proclaims; it is also an illustration of literalism. This literalism misses the drama and subtleties of history when it omits those who do not use traditional terminology (such as the Renaissance thinkers) and groups together those who merely happen to have used a common vocabulary.

The *Syntopicon* explicitly embodies a belief that the great minds of the Western tradition "exist together in a single universe of discourse" in which rarely, if ever, will one find "flat and isolated contradictions" (vol. 3, pp. 1255, 1260).[1] On the basis of this conviction, the *Syntopicon* strives to maintain what it calls systematic ambiguity or dialectic objectivity: all sides of a question are to be presented; taking any one position that excludes any other is to be avoided (vol. 3, pp. 1241, 1249, 1261, 1269). Objectivity and neutrality were among the great goals of the scientific method embodied in classical physics and also in the world view of positivism, to which its tone clearly relates the *Syntopicon*.

1. The *Syntopicon* comprises vols. 2 and 3 of the *Great Books* series.

In the *Syntopicon*, the ultimate reality appears to be the reality of physical facts. The goal of science is to uncover laws, and, as such, science (and philosophy) are superior to history and poetry, which remain tied to particulars (vol. 3, p. 1286). The *Syntopicon* reflects a belief in a world of nominalism: laws proceed from the constituents of the universe, which are tangible, atomistic, and discrete. Physics is defined in its separate chapter as the theory of becoming and the order of nature or change. While an attempt is made to include Plato's realm of being and the later mathematicians, and while the chapter, citing the unresolved nature of the subject, ends on an uncommitted note, its writer leaves no doubt where he stands: "In anyone's view, if a science does not investigate sensible realities, if it does not undertake to account for the motions of actual bodies, or, most generally, if it has no concern with the phenomenon of change, then it does not have the character of physical or natural science" (vol. 3, p. 363).

There appears to be a strong antimetaphysical bias throughout the *Syntopicon*. This surfaces in an impatience with "pure" philosophy, with philosophers who "complicate the matter." As the "old riddle" of universal versus particular recurs throughout history, perhaps "some tolerance and patience may be won for the burdensome technicalities of the problem." Parallelling this, the observation is made that skepticism which would deny the accessibility of truth to man is an "extreme sophistry" (vol. 3, pp. 963–64, 915).

The accessibility of truth, the priority of the science of fact over speculative philosophy, the "neutral" methodology, the pervasive scientific values, all recall the positivism of the late nineteenth century which lingered on into the twentieth. The contemporary form of this kind of positivism has been called scientism by Floyd Matson and others. As they define it, scientism is found in many quarters of the intellectual world and even more widely in popular thought, and is especially characterized by the combination of the positivist stance and a commitment to the achievements and values of mid-twentieth-century technology.[2]

The *Syntopicon* is strikingly pervaded by optimism, and this is the characteristic mood of positivism and scientism alike. The chapter on "Man" quotes Pascal and Kant as mediators between optimists and pessimists on human nature. But it ignores the basically pessimistic context of the thought from which the quotations from these philosophers are extracted. To them, man is both more miserable and limited than sublime. Sin and radical evil, and the limits of reason, were their realities. Similarly, Freud is quoted out of context on psychoanalysis as a new method only, and not new subject matter (vol. 3, p. 2).

That a reference work should attempt proficiency in the universe—that is, expertise in the whole of science and all of the humanities—is an anachronis-

2. See especially Floyd Matson, *The Broken Image: Man, Science and Society* (New York: George Braziller, Inc., 1964).

tic goal. Striving for it, the *Syntopicon* applies the scientific method very generally, and the result is an implicit scientism which creates problems and interferes with the effectiveness of the work as a reference tool. We may finish an outline and the running down of its citations with the conviction that we have exhausted all of the issues and have all of the answers. We may be led to believe, for example, that all the important statements about nature have been made by scientists, or, more broadly, that knowledge is divided into neat compartments and that we can master them successively and with the same approach.

We have observed that the essays of the *Propaedia* and their titles can be construed as relinquishing the goal of absolute objectivity. On closer examination, however, this proves not to be so. The outline of psychology following Loren Eiseley's essay on "The Cosmic Orphan" manifests an approach which rejects the possibility of radical differences in human nature. The possibility of subjectivism is similarly excluded when major psychiatric disturbances are treated as relative aberrations. The closest we come to the modern conception of a subject such as alienation is in the several kinds of "Strains and challenges put on adequate personality functioning" (p. 262).

The values implicit in the *Propaedia* remain the values of scientism. Moreover, the fact that academic scientists as the *Propaedia* conceives them are not philosophers who ask moral or metaphysical questions is made very clear, for example, in Nigel Calder's essay on "The Universe of the Physicist, the Chemist, and the Astronomer." The "paramount question of the physicist" is the question of why hydrogen is the raw material of the universe. The potentially disturbing discoveries of modern physics are treated as curiosities: "There is even the uncomfortable suggestion that our whole universe may be just a big black hole in someone else's universe!" (pp. 18, 19).

Obliviousness to basic philosophical challenges similarly marks the nonscientific essays in the *Propaedia.* So does complacency and a characteristic sentimentality. Loren Eiseley's "The Cosmic Orphan" cites man's plight as the creature who asks questions but can never really know his past or future. Eiseley admonishes man to look beyond himself and to look within his heart for humility. Wilfred Cantwell Smith's essay is tantalizingly entitled "Religion as Symbolism," but he concludes, entirely in the vein of turn-of-the-century liberal and optimistic Protestantism, that "Religious symbols do not raise man above the human level, only to it" (p. 500).

Mortimer Adler himself wrote the essay on "Knowledge Become Self-Conscious" that concludes the *Propaedia*, and its title and special place suggest that he may be coming to grips with the profound introspectiveness, self-scrutiny, and revaluation of potential that are characteristic of modern, post-positivistic culture. But it is immediately clear that objectivity, absolutism, and the unity of truth are still his ideals and beliefs. The title indicates that Adler knows perfectly well where he should be walking, but he has not been able to shed old assumptions and faiths. Adler quotes Aristotle on the highest

form of intellectual activity as "thinking about thinking itself," stops short of an endorsement, and goes on to say that it is nevertheless true that "knowledge become self-conscious" is "a distinctive characteristic of the human enterprise of knowing" (p. 692). Adler has missed the extremely important point that, since Kant, it is no longer possible to hold thinking about thinking as simply an intellectual luxury or goal. The Kantian revolution, insofar as it asserted that man's mind permeates his experience and perceptions, has made thinking about thinking the actual starting point for philosophy. Marx and Freud completed this revolution: all values, and knowledge itself, are determined by existing socioeconomic structures and individual psychic structures, masked in ideologies and drives and impulses.

Adler appears to ignore the disturbing questions surrounding the issue of subjectivity. He tells us that in his view there are three major intellectual challenges: whether the various branches of knowledge can or should be arranged in a hierarchical order (his answer is the circle of learning); whether the branches of knowledge somehow complement one another or whether they are rather "isolated in logic-tight compartments" (his language indicates his answer); and the "two cultures" question of whether the sciences are separated from the humanities by an "iron curtain with no communication." While he does not wish to give a definitive answer, he acknowledges that the conception of the encyclopedia as a totality "would seem to favor the view that, in the circle of learning, there are no impenetrable barriers to communication or unbridgeable breaks in continuity. Underlying it is the faith that the whole world of knowledge is a single universe of discourse" (p. 693).

The *Encyclopaedia Britannica* was designed for the nonspecialist who would be a universal man. It rejects the language of special fields because these languages are considered artificial barriers to what is basically communicable. But what we are left with, when the specialized terminology is discarded (and it should be noted that often it is not) is *not* the neutral language of *Britannica's* ideal Everyman, but a vocabulary grounded in and inseparable from the values, approaches, and presuppositions of scientism. The two cultures are not reconciled; one has been opted for at the expense of the other. The two-cultures split is thereby intensified, and the only logical alternative, a relativistic universe of diversity (the possibility of which Adler rejects) and tolerance (which he never comes to) in which both the inherent, irreducible uniqueness and absolute validity of every constituent part is presupposed, is excluded. Such a universe is characteristic of modern historicism—the intellectual movement that, like Kantian thought, finds its origins in a revolt against the Enlightenment.

The *Dictionary of the History of Ideas* does not have a scientific bias. If it had a bias in favor of the humanities (and we have seen that the apparent emphasis of its subjects suggests it does not), one would assume that it would give a favorable treatment, for example, to Existentialism and look unfavorably on logical positivism. Yet it does not. Its article on logical positivism was written

by a member of this school and its article on Existentialism by a philosopher noted for his critical attitude to this movement. Moreover, each writer demonstrates both sympathy with and awareness of the limitations of the subject with which he is dealing.

The *Dictionary of the History of Ideas* is able to manifest both the relativism of historicism and the critical stance of science because science itself has changed radically in the twentieth century. The change is such that there are now grounds for a fruitful rapprochement between the sciences and the humanities, unprecedented since the Scientific Revolution. This is reflected in the *Dictionary of the History of Ideas.* The article on "Relativity," for example, by Banesh Hoffmann, a mathematician, shows an appreciation both of the significance of the new science and of Kantian subjectivism with its implication of self-knowledge. The critical stance is here applied to world and self alike. The article also demonstrates the objectivity that is paradoxically more likely to arise from strict philosophical relativism than from scientism. Hoffmann is appreciative of relativity's revolutionary significance without endorsing it. Rather, he chooses to view relativity historically and feels that its monumental quality transcends its scientific triumphs. This quality "is manifest in the naturalness and seeming inevitability of the theory's growth, the beauty and structural simplicity of its architecture, and the interlocking economy of its basic hypothesis" (vol. 4, p. 91). He indicates that there are problems with the theory, but "for all its problems and whatever its fate, [it] will endure as a towering masterpiece in one of the most difficult and demanding of art forms: theoretical physics" (vol. 4, p. 92).

Hoffmann avoids the danger of aestheticism inherent in historicism. He demonstrates a technical mastery of the intricacies of relativity physics. He conforms precisely to the requirements outlined by Wiener in the preface to the *Dictionary.* Concerned with the historical ramifications of certain pivotal ideas, Wiener suggests that contributors start with a careful internal analysis of an idea and, avoiding "sophistic confusions," trace "the historic role of such pervasive models [as relativity]" in diverse fields. The truths of the future will be different, but still there is a "unity of human thought and its cultural manifestations in a world of ever increasing specialization and alienation." Truths are an expression of creativity and commitment: "taking stock of the ideas that have created our cultural heritage is a prerequisite of the future growth and flourishing of the human spirit" (vol. 1, p. viii). Hoffmann reveals the effects of the underlying philosophy of his subject on himself as a specialist. Other articles demonstrate the complementarity of the different views and approaches apparent in the *Dictionary* (vol. 3, pp. 218–22).

Moral relativism is a problem inherent in the whole stance of the *Dictionary.* Characteristically, it attempts to deal with this, as, for example, in the articles on "Relativism in Ethics" and "Historicism." The article on "Historicism," a key article, was given to an author committed to a critical position: Georg Iggers. He is clearly troubled by the value neutrality of the position and

clearly attracted to the *Annales* school (for example) for its assumption of scientific methods of historical inquiry (vol. 2, p. 463). But he knows how strong the historicist challenge has been, and how even its critics have absorbed its ideas. And so his difficult conclusion (significantly lodged in a discussion of the Frankfurt School which is rooted in German idealist thought and is skeptical about the Enlightenment) is that "the question remains whether a dialectical method without rational norms which have intrinsic validity beyond the historical situation can overcome the dilemmas of Historicism" (vol. 2, p. 463). Thus the least encyclopedic and least classical of the three reference works would seem to have as the functional result of its philosophical position the greatest degree of breadth and objectivity.

REVIEWS

Universal Bibliographic Control: A Long Term Policy, a Plan for Action. By DOROTHY ANDERSON. München: Verlag Dokumentation, 1974. Pp. 87. DM 16.80 (paper). ISBN 3-7940-4420-7.

The first part of Dorothy Anderson's book is essentially a manifesto in which the old dream of librarians of putting all the world's publications under some sort of bibliographic control is resurrected. The new rubric for this program is Universal Bibliographic Control (UBC). Before examining difficulties in the book, I will describe Anderson's plan further. In the past, schemes for UBC involving centralized control have failed. To take the place of a centralized system, Anderson proposes that each country or, where that is impractical, various regional groupings of nations, should accept the responsibility of providing a national or regional bibliography. The entries found in these bibliographies will be acceptable worldwide because they will conform to international standards. Each national bibliography will increase its coverage through improved laws of legal deposit. Higher-quality governmental publications, by increasing the standardization of the format of printed materials, will help improve the book trade in underdeveloped countries. All this will in turn promote better bibliographic coverage. Consultative services are to be provided by the International Federation of Library Associations (IFLA) and UNESCO. I hope I have been fair in my summary, for Anderson's style is difficult and full of ambiguity.

Before asking whether Anderson's scheme for UBC will work, it would be advisable to inquire rather more closely into just what it is to do. On page 11 she says, "The purpose of the [UBC] system is to make universally and promptly available, in a form which is internationally acceptable, basic bibliographic data on all publications issued in all countries."

I am unsure what "basic bibliographic data" means. The only indications of what Anderson means are found in the appendix or second half of the book, which describes projects of standardization under way. Foremost is the International Standard Bibliographic Description (ISBD), which identifies the edition of a bibliographic entity and provides a record of its publication. Anderson, however, appears interested in more than just a record of publication. A catalog record is also to be furnished. Anderson thinks this might be done through internationalizing the *Anglo-American Cataloging Rules.* But a set of cataloging rules will allow normalization of the names of authors only in so far as sufficient information is available to the cataloger of the book in hand. This is unlikely to be the case with authors who write in more than one language, who publish in more than one country, and who vary the exact form of their names from time to time. Thus, catalog information for authors' names derived from the nonuniform sources of national bibliographies can be used only with caution. This is especially true for the names of corporate bodies.

Loss of the centralized name authority file, a virtue of earlier schemes and still a virtue of the Library of Congress Shared Cataloging Program, carries with it the loss of a vital part of a catalog record. To be sure, the ISBD body of the entry is always valid, but to claim that this most simpleminded part of a catalog record is important for cataloging is to make the same error that ensured the failure of the scheme de-

scribed in Valter Ahlstedt's "Unit Cataloguing" (*Libri* 1 [1950]: 113–70). Descriptions can only create a bibliographic record of deposit in a national bibliography and display the fact of publication, but nothing more. It may be argued that a record of publication is vital, and so it is for a number of reasons. Perhaps they are the sole and sufficient reasons for UBC. But the production of cataloging records is simply not feasible under the decentralized UBC scheme. Thus the UBC goals of decentralized bibliographic coverage and the production of catalog records are in conflict.

Conflicting goals are not the only problem with the UBC program enunciated by Anderson. At least one is impossible. On page 70 Anderson advocates a "switching mechanism" for subject control through a "Broad System of Ordering" in the fashion of UNISIST proposals. Such a common denominator will either be logically impossible (as I suspect it is) or so vague and general as to be useless. In any case, it is an undesirable addition to the program.

To summarize the success of Anderson's version of UBC: internationally acceptable formats for communicating bibliographic information are indeed being formulated. However, until a detailed analysis is carried out of the sometimes conflicting purposes for which it is required, the information to be communicated is not susceptible to standardization.

I am critical of this book because it raises no questions, analyzes no problems, and advocates no position except that of adding more projects to UBC, many of which entail vast expenditures. This strategy will, I believe, ensure the failure even of the limited and valid goal of creating a record of publications of certain well-delimited classes of material, a record that is still sorely needed. The origin of the book as a "working document presented by IFLA to the Unesco Intergovernmental Conference on the Planning of National Overall Documentation, Library and Archives Infrastructures, 23–27 September 1974" (verso of title page) may explain its failure. It would have had to please all the participants and offend none by asking questions, some of which might have opened areas of conflict.

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The Road to Infoterm. Two Reports Prepared on Behalf of UNESCO: Inventory of Sources of Scientific and Technical Terminology; A Plan for Establishing an International Information Centre (Clearinghouse) for Terminology. By EUGEN WÜSTER. Infoterm Series, no. 1. München: Verlag Dokumentation, 1974. Pp. ix + 141. DM 36 (paper). ISBN 3-7940-5501-2.

This publication provides a detailed record of the incredibly enduring efforts of a multitude of terminology aspirants, mainly in central and western Europe, to attain acceptance of international standards status for their work.

Since the major effort over the past twenty or more years has revolved around Dr. Eugen Wüster in a little Austrian hamlet, it is fitting that one of the first contractual assignments of the UNISIST program went to Wüster, working with the Austrian Standards Institution. Based on work in his own library and with a few of his devoted followers, Wüster enumerates the organizations, groups and individuals, bibliographies, and other reference sources useful for terminological work. The second section of the book is devoted to standards and standardization. Both of these topics are then documented by an extensive listing, with facsimile extracts, of the sources used in compiling this record of available information. All of this comprises the first report, in 64 pages, bringing the reader up to 1973.

Infoterm is the acronym of the International Information Centre for Terminology, with official locus in the Austrian Standards Institution. The second part of this

booklet outlines the inception of the Infoterm project and sets forth the detailed program envisioned by its sponsors. This section reports the activities of national, international, and professional groups engaged in terminological activities in many countries. Included are charts, copies of documents, resolutions, bibliographies, and a mass of citations provided to document the extensive activity in this field over the past two decades and to serve as an established basis for the future work of Infoterm.

For a reader interested in theoretical or philosophical approaches to terminology, this booklet can serve as a useful source book. For one seeking practical guidance for solutions to the real problems of creating specific terminologies, its pages provide no answers. As a source book for bibliographical or organization identification, the publication is as accurate and reliable as only Wüster, the great activist of this field, could make it.

Jerrold Orne, *University of North Carolina at Chapel Hill*

Learning Resource Centers in Community Colleges: A Survey of Budgets and Services. By SARAH KATHARINE THOMSON. Chicago: American Library Association, 1975. Pp. xiv + 146. $6.50 (paper). ISBN 0-8389-0206-5.

The Community College Library. By FRITZ VEIT. Contributions in Librarianship and Information Science, no. 14. Westport, Conn.: Greenwood Press, 1975. Pp. xiv + 221. $13.95. ISBN 0-8371-6412-5.

The increasing importance of two-year colleges is a phenomenon of American education of the last several decades. Serving a broad range of learning abilities, and above all emphasizing teaching, community colleges have been forced to develop new instructional approaches. Their libraries, concerned with the learner, tend to develop into "learning resource centers" (LRC), communicating through a variety of media and promoting nontraditional services as routine operations. Modern community college learning resource centers exemplify the dynamic changes taking place in the structure of librarianship, yet despite growing interest in these activities there is a general lack of knowledge outside their own circles about community colleges and their libraries. The two new studies considered here should receive wide readership.

Sarah Katharine Thomson reports on her recent intensive survey of the budgets and services of library learning resource centers. Her study, which focuses on "the interrelationship between expenditures and service programs for learning resources in large public community colleges in the United States" (p. 1), is based on visits in 1973–74 to twenty-seven campuses and three college district offices located across the country, selected simply on the basis of their budgets' size.

Thomson's book provides a picture of the community college LRC which will be absorbing to any interested reader: administrators, practicing librarians, students, and educators. It should be required reading at the library school level if only because of the vitality in the image drawn here. This is no textbook describing disparate trends or installations or traditions; it is a pertinent report of the services actually being supported by these institutions. Herself an administrator of a large, modern community college learning resource center, Thomson's approach is comprehensive, and her explication of data is specific.

Even the recognition of failure to achieve one of her objectives is a useful statement: because of the variances existing everywhere among these LRCs it was impossible to devise "a formula for cost inclusion which would give a common data base to all, and which would permit fair, reliable, valid, and replicable comparisons" (p. 58). Pro-

grams differed, methods of charging varied, chargeback policies were inconsistent. Inevitably inclusions or omissions of substantial costs invalidated use of the budget as a basis for interinstitutional comparison.

It would have been helpful to me if Thomson had identified some of the people whom she quotes, yet obviously the success of her survey depended on the guarantee of confidentiality.

Thomson creates a clear image of where the two-year college LRC now stands, emphasizing the extent to which it has added to traditional library services not only the storage and delivery of nonprint materials, but also their original development and production in a variety of media. "Strong need was expressed in some Learning Resource departments for good script writers, a relatively new idea . . . correlated with the emphasis on individualized, custommade instructional materials . . . " (p. 73).

In *The Community College Library,* Fritz Veit seeks to cover every aspect of library operations applicable at the community college level. He devotes a chapter to "Standards and Guidelines," another to "Planning the Building." The depth of his detail is sometimes overwhelming, the breadth of his coverage tending to obscure the very thrusts which specially characterize community college librarianship.

Veit gives the sense of being removed from the scene; his writing is often pedantic. The statement that "microforms are non-print media" (p. 118) will seem absurd to LRC librarians as well as to their media specialists. In 1974 it would perhaps have been better to recognize that OCLC is potentially more than "an agency which supplies cataloging copy" (p. 91).

Yet there is value in the range and diversity of subjects Veit encompasses. His chapter notes are generally current and his sources authoritative and will be an excellent source for further investigation by the interested reader. However, the difference between these books lies precisely here: Veit draws often on others' experiences or writings, whereas Thomson describes only activities actually observed.

The 2 books are complementary. Veit is more comprehensive than Thomson, his introductory chapter describing the history and development of the community college is worth special note, but the very mass of the information he presents tends to cloud the picture. Thomson's book is far more effective. She communicates the essence of the community college Learning Resource Center, drawing a clear picture of librarianship in the process of change.

Irwin S. Stein, *Corning Community College*

Evaluation of Alternative Curricula: Approaches to School Library Media Education. By the SCHOOL LIBRARY MANPOWER PROJECT, ROBERT N. CASE, Director, ANNA MARY LOWREY, Associate Director. Chicago: American Library Association, 1975. Pp. xi+183. $11.75 (paper).

The concept of the study reported in this document is of much greater importance than the magnitude of its impact. In using the old analogy of someone dropping a pebble into a pool, there will inevitably be ripples created as a direct result of the final phase of this study. Its importance lies in the fact that someone had the idea of dropping this pebble at this time.

In historical perspective, this publication is the final report of the School Library Manpower Project, a six-year project funded by the Knapp Foundation of North Carolina, Inc. and administered by the American Association of School Librarians. The initial grant of over $1 million was to fund a study of task analysis, education, and utilization of school library media personnel. The School Library Manpower

Project originally included two distinct phases. Phase I was to study the roles and job functions of school library media personnel as modified or affected by current societal and educational change. During Phase II, six innovative experimental educational programs for professional school library media personnel were established based on the findings of the initial phase. *Curriculum Alternatives: Experiments in School Library Media Education* was published in 1974 (Chicago: American Library Association) as an evaluative and summary report of Phase II. Midway through the project a need for an evaluation study was identified and an additional grant was obtained to implement the third phase of the study. This final publication is intended to provide an assessment of the validity of the experimental programs, to give guidance for future directors of school library media education programs, and to demonstrate the value of a quality control system for continued evaluation and improvement of education programs.

The philosophy underlying the evaluation activities in Phase III is that one major purpose of an instructional program is to produce graduates who can capably perform the job activities required in the field. Quality control activities are needed both at the school and in the field to assess how adequately graduates are prepared. Therefore, the information contained in this publication was obtained from program directors, program graduates, supervisors of program graduates, and students currently attending programs. Survey instruments and interviews comprised the methodology used for obtaining the data. Critics scrutinizing the methodology, the design, and the instrumentation would be able to identify weak areas, such as the relatively low percentage of respondents. However, as stated at the outset of this review, the concept is the important factor.

The portions of this publication which are of the most value are found in the appendix and the status reports submitted by the universities and colleges conducting the experimental programs. Their summaries of program impact, and their conclusions and recommendations, provide the guidelines for future directions. These statements focus on interdisciplinary aspects, individualized instruction, internships, competency based programs, instructional development, and quality control through evaluation. The report contains an outline of the methodology of the study, includes copies of the survey instruments, and carefully documents the findings. The chapter entitled "Final Assessment" summarizes the recommendations and provides direction for further research.

In the difficult and complex task of analyzing and improving professional education, this project was a commendably brave first step. The Advisory Committee, project directors, and program directors would undoubtedly agree that there is still a long way to go, but this publication will provide the foundation for future progress. The impact of this study may not be of tremendous magnitude, but the impact of the concept which underlies it is immeasurable.

Margaret Chisholm, *University of Washington*

The Ontario Public Library: Review and Reorganization. Prepared for the Ontario Provincial Library Council by ALBERT BOWRON. Toronto: Albert Bowron/Information, Media and Library Planners, 1975. Pp. 184. $6.50 (paper). ISBN 0-88993-000-7.

This latest study of Ontario public libraries appears ten years after the St. John report (St. John [Francis R.] Library Consultants, Inc., *Ontario Libraries: A Province-wide Survey and Plan* [Toronto, 1965]). In September 1974, the Ontario Provincial Library Council received a grant of $25,000 from the Ministry of Colleges and Universities, approved a plan, and awarded a contract to Albert Bowron/Information, Media and Library

Planners. (In 1975, public libraries were transferred to the Ministry of Culture and Recreation.) The study was somewhat ill omened from the beginning, since the original proposal had estimated costs at $50,000 and no clear direction came from the council on revising objectives or on imposing limits because of the reduced funding. Mr. Bowron made "most of the decisions in this regard . . . as the study progressed" (p. 7).

Without a clear statement of objectives it was inevitable that the report would exhibit a lack of direction and cover too broad a spectrum. Although a section is labeled "Data Collecting and Analysis," it is difficult to determine the methodology used. "A literature search restricted to specific headings was made" (p. 9), but there is no bibliography and no list of the headings. It is equally difficult to relate the methodology to the objectives or to the short list of problem areas which were identified at the beginning of the study. The study included checklists, questionnaires, structured interviews, and statistical data which resulted in 24 tables, but the language is imprecise, the graphs deceptive, and the tables unclear. Although librarians discuss the need for "statistics" and "hard facts," a consultant/librarian should approach the matter with great care and, probably, in the company of a statistician.

If the objectives are not clear and if the methodology is faulty, what does the report do for public libraries in Ontario? After a most successful career as a librarian, Bowron established his consulting firm in 1969. He has kept abreast of library development in Ontario, across Canada, and abroad. His opinions are at least as valuable as anyone's, and the library authorities should not discount them.

Since the mid-1960s, a number of community information centers have sprung up in large and small urban areas of the province. Many closed their doors after the initial enthusiasm disappeared, but at the present time some forty-eight receive partial support from the Ministry of Culture and Recreation. Bowron recommends "that standards for community information centres be framed to permit the provision of such services by public library boards" (p. 45). In the past, the method of provincial funding of these centers has denied funds to public libraries to support them within the libraries. It is an important issue.

The recommendations relating to the Provincial Library Service Branch (PLS), the Ontario Provincial Library Council (OPLC), and public library boards may spark an examination of the functions and relationships of these bodies. The proposed responsibilities of the PLS are not dissimilar to those now assigned. The real question is, Will the government provide the funds and therefore the staff to do the work? Many librarians think that the OPLC has failed to come to grips with the problems now facing public libraries such as planned systems development and networks, automation, equitable funding, and provincial grant regulations which encourage the formation of small library administrative units. The recommended change in the method of appointment may make the council more representative, but will it be more effective? The significance of the change in name from council to board is not apparent. The analysis of public library boards and of their relationships with municipal councils is probably a first in Ontario library literature. Should library boards be independent? Bowron says yes. Should council have more representation? Again, yes. Should boards of education make appointments to library boards? No. Should a time limit on board membership be imposed? Yes. Should they be paid? Yes.

It is in chapter 7 that the matter of very small, and in some cases nonoperating, library authorities is discussed with a recommendation that those serving less than 15,000 must reach a level of local support equal to 1½ times the provincial grant within two years and become part of a larger unit. This recommendation has within it political dynamite.

Ontario is going through a period of reorganization: municipalities are being amal-

gamated and new government structures are appearing. Under such conditions the amazing thing is that public libraries have worked together and have developed services in many parts of the province.

In the report, the development of automation in libraries in Ontario has been tied to central cooperative processing. To some extent, technology has outrun the report, and yet the benefits to Ontario public libraries of the application of electronic data processing have not been explored. A recommended workshop on the matter hardly seems sufficient "to work out a unified public library policy and a development plan" (p. 142), but if a working group could evolve, then a plan might be developed.

It is unfortunate that the analysis of the data in chapter 11, "A Test of the Relevancy of Current Canadian Collections in English," is inadequate. The three lists—reference books, periodicals, and current books—were developed with considerable professional assistance (p. 10). The lists were checked by 115 out of the 118 libraries serving populations over 10,000 (5,000 in the northern areas), an outstanding response that indicated the interest of the librarians. However, the lists are not included (although a note says they may be examined), percentages of holdings in each library have apparently been averaged, and in general the language of the analysis is not clear.

One would hope that a library school would obtain the data before it is too out of date, reexamine it, and make provision for continuing the project periodically over the next ten years. Canadians are concerned about the Canadian content of all libraries, and the work done for this study is a good starting point.

Chapter 13 contains "a proposal for the reorganization of public libraries in Ontario," with six final recommendations. The proposed complete restructuring of the Regional Library System provides for a reduction in the number of library authorities from fourteen to seven. In fact, however, since two would remain the same, twelve would be reduced to five. Would such restructuring provide more equitable, faster, cost-effective library service? Carefully planned and implemented, the result could be beneficial, but it will demand a spirit of cooperation and hard work along with some money.

It seems unfortunate that the report attempted too much. The result is a report that reads more like the record of a brainstorming session than a carefully researched study. However, if it brings the public library community together to plan more effectively, it will have been worth it.

E. Stanley Beacock, *London Public Library and Art Museum, Ontario*

Special Libraries—Worldwide: A Collection of Papers Prepared for the Section of Special Libraries of the International Federation of Library Associations. Edited by GÜNTHER REICHARDT. IFLA Publications, no. 1. München: Verlag Dokumentation, 1974. Pp. 360. DM 68. ISBN 3-7940-4421-5.

These papers are selected and reprinted from *INSPEL,* the quarterly publication of the Special Libraries Section of the International Federation of Library Associations. They are a mixed bag. Variety is the hallmark—variety in subject specialization, in locale, in the level of sophistication of the libraries, in the aspects of special librarianship presented (association activity, publications, education for special librarianship, and practice of the art), and in the usefulness and interest of the papers to special librarians in the United States. Variety can also be noted in the quality of editing (whether of this collection or of the original journal or of both would require checking the originals). Whatever the reason, there is considerable variation in the carefulness of editing, in the quality of the translations, and in the value of the papers.

The criteria for selection are not revealed, but it is likely that papers were chosen as much for being representative as for being excellent.

Descriptions of the organization or activities of the Special Libraries Section and its subsections (astronomy, geography and map, and social sciences) occupy the first portion of the book. The bylaws of the section and a brief history of it by Karl Baer are included. Papers concerning special libraries in twenty-three countries all over the world follow. Some of these describe individual libraries, but most are concerned with special libraries and librarianship in a particular country.

It is interesting to note that there is no general agreement on what a special library is. Throughout the book definitions are now and then implied and sometimes stated. It is obvious that most special librarians abroad consider themselves "special," just as American special librarians do. It is not so obvious in reading these papers exactly what makes a special library essentially different in function from other kinds of libraries. Four papers on education for special librarianship do not make clear how "special" special is. They do not reveal any substantial body of knowledge to be taught to special librarians that differs, except in emphasis, from the knowledge, skills, and techniques to be taught to other kinds of librarians.

Nearly all the European writers carefully refer to libraries and information (or documentation) centers, making clear that in their minds there is a functional distinction. If a documentalist is indeed different from a librarian, the difference must be most apparent in the in-depth analysis of information performed by the documentalist. Is this not a task that librarians in some special libraries are quite reasonably expected to perform?

For the American special librarian, the most useful portion of the collection will probably be the papers describing, often with specific citations, the publications and special services of libraries around the world. In some cases, the services described are automated systems of a special kind. There is considerable fascination in reading accounts of the worldwide state of the art that include so large and important a section of librarianship. Naturally, the similarities in problems and practices are as striking as the differences. Most of these papers were written in 1969, 1970, or before. They describe special librarianship in the great world as it existed six or seven or more years ago. In spite of that time lag, this collection is of current interest and use.

Joseph Benson, *Chicago Transit Authority*

The Film User's Handbook: A Basic Manual for Managing Library Film Services. By GEORGE REHRAUER. New York: R. R. Bowker Co., 1975. Pp. xiv + 301. $14.95. ISBN 0-8352-0659-9.

The relatively recent and rapid growth of film services in libraries has created the need for a basic reference work on the subject which the beginner could readily comprehend. Dr. George Rehrauer's *The Film User's Handbook: A Basic Manual for Managing Library Film Services* attempts to satisfy this need. This handsomely produced and well-illustrated book has as its stated purpose, "to give an overview of film services, provide information about and recommendations for film use, and suggest patterns and potentials for the future" (p. xiii). According to the preface, Rehrauer's intended audience includes anyone beginning or enlarging his film service or the experienced professional.

The book includes discussions of all aspects of library film service; film cataloging, selection and acquisition procedures, hardware and software, and standards and policies are all covered. Chapter 2, "The Evolution of Film Service," contains an interesting chronology of events in film history since the first practical demonstration of a

camera obscura by Leonardo Da Vinci in 1519. Although it is short and therefore sketchy, this section is useful to the reader with no background in the history of film. Near the beginning of his book Rehrauer includes a passage on the "Rationale for Film Service in Institutions," in which he presents arguments justifying film services in libraries; his discussion of the language of film in this section is vague. He does, on the other hand, make an excellent point when he writes, "It is the greatest disservice to any art form to use it to promote either another medium, a building or a service. Film is unique unto itself and should not be relegated to a shill position" (p. 10).

It is difficult to present a total picture of all aspects of film service in a small amount of text (Rehrauer's text is 189 pages, while the rest is appendixes and an index). Moreover, the book suffers to some degree from the simplicity of approach which is demanded by the limitation of space. I question whether the text itself would be of much use to the experienced professional as the preface maintains. However, perhaps the most valuable aspect of this work is the nearly 100 pages of appendixes. They include an excellent annotated bibliography as well as lists of film periodicals, distributors, equipment manufacturers, and professional associations and organizations. A glossary of film terminology is also of value to the novice, and the index to the book is fairly detailed.

The book lacks footnotes, and they are sorely missed when the author makes such statements as "Film audiences comprise not only readers, but also that 75 to 80 percent of the American population that does not and probably never will care for books" (p. 10). Nevertheless, throughout the text the author does make some reference to materials which presumably served as his sources for much of the information he provides.

With the reservations noted above, the comprehensiveness of Rehrauer's book recommends it to anyone beginning a film service or anyone who is mildly interested in library film services; it might possibly serve as a textbook for a beginning class in library film services. But the superficiality of the work demands that it be used in conjunction with other appropriate materials on library film services.

Charles E. Kregel, Jr., *University of Kansas, Lawrence*

Systematic Discography. By LEWIS FOREMAN. Hamden, Conn.: Linnet Books; London: Clive Bingley, 1974. Pp. 144. $9.50. ISBN 0-208-01197-8.

"No one has previously attempted to produce a comprehensive guide to the compilation of discographies." Thus begins the introduction to Mr. Foreman's little book. Now the attempt has been made, but the result is of limited value. The author seems to have aimed at too wide an audience: professional librarians, serious collectors of early recordings, and plain folks with a pile of discs to organize. Because of such a diffuse target, he has been led to include a range of topics which is too grand for their container. His efforts are further complicated by his dependence on a rough sort of induction in his delineation of "systematic" procedures.

Content includes the history of sound recording, problems of preservation, relations between discography and bibliography, some cataloging rules, reference sources for the cataloger of recordings, some attention to automated processing, lists of record dealers (mostly British), lists of "unusual and pirate labels" (with or without addresses), a selective inventory of discographies, some review sources, and a rather arbitrary bibliography. There is also an unsteady index. Librarians will find some utility in the discussions of disc wear (methods of assessing wear and ways of describing record condition), dating, and authenticity questions. Amateurs will learn something about matrix numbers, release dates, reviewing media, and standard discographies.

None of the intended readers is likely to learn any principles of discographical description, classification, or subject analysis, since these principles are not offered. Foreman believes that "there are no specific rules to follow, only the example of those already in the field, and the dictates of the material being catalogued" (p. 7). Accordingly, he presents numerous specimens of entry style and arrangement, trusting the reader to draw his own principles from them. Since the examples given are from works compiled with varying degrees of skill, the reader will be fortunate to make much sense of it all.

Anyone who wishes to read a thoughtful essay on the nature of discography will better turn to Gordon Stevenson's "Discography: Scientific, Analytical, Historical and Systematic" in *Library Trends* 21 (July 1972). Anyone who needs a topical list of discographies will better look for David Cooper's *International Bibliography of Discographies* (Littleton, Colo.: Libraries Unlimited, 1975). And whoever may be inclined toward the delicate art of cataloging and classification of recordings would certainly begin with the basics: the Music Library Association *Code for Cataloging Music and Phonorecords* (Chicago: American Library Association, 1958), the revised chapter 14 of the *Anglo-American Catalog Rules*, or the very lucid guidance of Bohdan S. Wynar's *Introduction to Cataloging and Classification* (5th ed. [Littleton, Colo.: Libraries Unlimited, 1976]).

Guy A. Marco, *Kent State University*

A Bibliography of Africana. By HANS E. PANOFSKY. Contributions in Librarianship and Information Science, no. 11. Westport, Conn.: Greenwood Press, 1975. Pp. iv+350. $15.00. ISBN 0-8371-6391-9.

The author of this bibliography is one of the leading Africanist librarians in the United States and has a considerable international reputation. The work itself is the result of several years of diligent data collecting carried out during the author's tenure as curator of the Africana collection at Northwestern University.

For the purposes of this guide, Panofsky defines Africana as "any type of publication dealing with Africa and including possibly anything and everything published in Africa" (p. 3). He further states that "Africana is not limited to the printed and written media which may be stored and preserved on microform" (p. 3) or on electronic computer devices. It can include phonorecords, videotapes, motion-picture films and photographs, and other forms of preservable records that depict sociocultural traditions of African nations and ethnic groups. Panofsky's book is intended to provide a handbook for students, librarians, and laymen who want to deepen their knowledge about Africa in their respective areas of interest.

The guide is organized into 6 parts, each one dealing with some aspect of African studies and African resources, concluded by a general index. In the far too sketchy "The Study of Africa" (pp. 9–26), the author briefly traces the history and development of African area studies in the United States, several European countries, and Africa and gives a summary of the work of the more important Africa-related institutions and their relevant publications. Part 2, "Bibliographies and Serials" (pp. 29–49), deals with periodical indexes, general bibliographies, newspapers in microform, acronyms, and other types of bibliographic sources. Although this part contains much useful information, it is disappointingly incomplete and clumsy. Also, one wonders why the section on bibliographies of African bibliographies is twice listed as "Biobibliographies" (pp. vii and 29).

In the following 3 parts the author discusses bibliographic guides to available resources for African studies research. These 3 parts represent the bulk of Panofsky's

book (pp. 53–328) and are sensibly organized and well documented. They offer the user a critical analysis of Africana resources by subject and discipline followed by a fairly comprehensive review of library materials produced in African and in non-African nations. It is most unfortunate, however, that several of Panofsky's statements in these 3 parts are inaccurate or questionable. He states, for instance, that of the leaders of pan-Africanism "only Edward Blyden has found his biographer—Hollis R. Lynch" (p. 55). But what about J. R. Hooker's *Black Revolutionary: George Padmore's Path from Communism to Pan-Africanism* (London: Pall Mall Press, 1967) or E. D. Cronon's *Black Moses: The Story of Marcus Garvey* (Madison: University of Wisconsin Press, 1955)?

In discussing resources from North Africa and the Maghreb, Panofsky rightly points out the fine reference value of the several Robert Lambert Playfair bibliographies (p. 150), although his citations, except one, are incomplete and inaccurate. Playfair's *The Bibliography of the Barbary States* consists of 6 parts (not 2): part 1—Robert Lambert Playfair, *Tripoli and Cyrenaica*; parts 2–3—Henry Spencer Ashbee (not Henry Spencer), *A Bibliography of Tunisia from the Earliest Times to the End of 1888* (not 1891) (also, the 1971 Gregg reprint is based on the 1888–98 London edition and not on an 1888–93 edition); part 4—Robert Lambert Playfair and Robert Brown, *A Bibliography of Morocco from the Earliest Times to the End of 1891* (not cited); and parts 5–6—Robert Lambert Playfair, *A Bibliography of Algeria from the Expedition of Charles V in 1541 to 1887* and *Supplement to the Bibliography of Algeria from the Earliest Times to 1895* (not cited).

The reference to Sir Apolo Kagwa (not Kaggwa) is also incorrect; he has never been a Kabaka of the Kingdom of Buganda (p. 209) but rather a Katikiro or chief minister for a few years under the rule of Kabaka Mwanga.

The proofreading of this book leaves much to be desired. It is annoying to see Imamu Amiri Baraka's name appearing with two errors (p. 54) and the title of the *Kölner Zeitschrift für* [not *der*] *Soziologie und Sozialpsychologie* misspelled and distorted (p. 76). In fact, the number of proofreading errors is beyond the rate of conventional tolerance. This is particularly disturbing in the case of a bibliographic work such as this. As for the last 2 parts, a more thorough discussion of the "Publishing and Book Trade" (pp. 331–39) and a better developed general "Index" (pp. 342–50) would have been welcome.

The various shortcomings notwithstanding, Panofsky's bibliography contains a great wealth of very useful current and retrospective information, and it forms a contribution to the growing field of library literature for African studies.

Eugene deBenko, *Michigan State University*

A World Bibliography of African Bibliographies. By THEODORE BESTERMAN. Revised and updated by J. D. PEARSON. Totowa, N.J.: Rowman & Littlefield, 1975. 241 cols. $25.00. ISBN 0-87471-749-3.

Theodore Besterman has extracted from *A World Bibliography of Bibliographies* (4th ed., 1965–66) entries referring to Africana, and these have been revised and supplemented by James Pearson up to the beginning of 1973. At first glance, the slim volume seems a most useful addition to the set of basic tools needed by librarians and scholars of Africa—all the more so since two of the most recent works covering this topic are out of print. These out-of-print works are: *A Bibliography of African Bibliographies Covering Territories South of the Sahara,* Grey Bibliographies no. 7 (4th ed., rev. to November 1960 [Cape Town: South African Library, 1961]) and Anthea Garling, comp., *Bibliography of African Bibliographies* (Cambridge: Cambridge University African Studies Centre, 1968). Bringing these two somewhat up to date are: Helen F. Conover and Peter Duignan, comp., *Guide to Research and Reference Works on Sub-Saharan Africa* (Stanford, Calif.: Hoover Institution, 1972); Peter Duignan and L. H. Gann, *A Bibliographical*

Guide to Colonialism in Sub-Saharan Africa (Cambridge: Cambridge University Press, 1973); Hans E. Panofsky, *A Bibliography of Africana* (Westport, Conn.: Greenwood Press, 1975); and Reuben Musiker, *South African Bibliography* (Hamden, Conn.: Archon Books, 1970) and its *Supplement 1970–1974* (Witwatersrand: University of Witwatersrand Library, 1975).

The Besterman/Pearson volume has consolidated some of this hitherto scattered material. Unfortunately, Pearson adhered to Besterman's exclusion of all bibliographies that did not appear as separate volumes, thus excluding such basic journal articles as Gordon D. Gibson, "A Bibliography of Anthropological Bibliographies: Africa" (*Current Anthropology* 10 [December 1969]: 527–66).

Some significant bibliographies of Africana, both before and since 1965, are missing. For example: Great Britain, Colonial Office, *Bibliography of Published Sources Relating to African Land Tenure,* Colonial no. 258 (London: H.M. Stationary Office, 1950); and Gerald M. Moser, *A Tentative Portuguese-African Bibliography: Portuguese Literature in Africa and African Literature in the Portuguese Language,* Bibliographical series, no. 3 (University Park: Pennsylvania State University Library, 1970).

Occasionally the work under review includes only a reference to a preliminary edition of a bibliography published ultimately in a journal. The acquisition or even location of bibliographies included by Besterman/Pearson is made difficult by the reluctance to list reprints and in most instances by the omission of the names of publishers from cited imprints.

Yet this work has numerous fine aspects. There are many references to archival collections, usually at Oxford, which are not found in the following works: Noel Matthews and M. Doreen Wainwright, comp., *A Guide to Manuscripts and Documents in the British Isles Relating to Africa* (Oxford: Oxford University Press, 1971) and Louis B. Frewer, *Manuscript Collections of Africana in Rhodes House Library* (Oxford: Bodleian Library, 1968) and its *Supplement* (1971).

The bibliographies included, many of which are quite obscure, are arranged within an alphabetical sequence of countries which may have a further subdivision according to subject or form. In the sections arranged alphabetically by country there are no entries for Burundi, Central African Republic, Equatorial Guinea, Gabon, Guinea, or Guinea-Bissau, nor even for Egypt. Within each section, entries are arranged chronologically. Printing and binding are good, as is the index.

Hans E. Panofsky, *Northwestern University*

Publishing in Africa in the Seventies: Proceedings of an International Conference on Publishing and Book Development Held at the University of Ife, Ile-Ife, Nigeria, 16–20 December 1973. Edited by EDWINA OLUWASANMI, EVA McLEAN, and HANS ZELL. Ile-Ife: University of Ife Press, 1975. Pp. ix + 377. $16.50 (cloth); $10.50 (paper).

The problem of publishing books in the Third World is a challenging one which has only recently engendered much debate. This volume is the first full-scale discussion of the specific problems of publishing in Africa and is therefore a useful contribution. The volume consists of the papers delivered at a conference held in Nigeria in 1973 on the problems of publishing. It also includes the recommendations of that conference. Like any volume of conference papers, the chapters vary in quality, style, and approach. All are related to problems of publishing, but the perspectives of the contributors differ widely, from several representatives of Western publishers to a Nigerian publisher calling for a "cultural revolution" in publishing. While many of the papers lack analytical depth, the volume as a whole provides a well-founded overview of African publishing.

Among the difficulties of publishing in the Third World are low literacy rates, a

lack of expertise in publishing, orientation of local authors to foreign (largely Western) publishers, and a very difficult distribution situation. Readers tend to be hard to reach and bookshops virtually do not exist outside of the major cities. Further, the continuing use of European languages in publishing and the multiplicity of local languages is a particularly serious problem in terms of reaching potential readers. These problems are discussed in this volume, but few of the contributors meet them directly. What is perhaps more disturbing is that there seem to be no easy solutions to the challenges facing publishing in the Third World. This is not a drawback of the volume under review but an indication of the seriousness of the problem.

Only one author in this volume, G. O. Onibonoje of Nigeria, directly attacks what seems to me a particularly serious problem of Third World publishing—the Western orientation of the emerging publishing industry. Onibonoje calls for a "cultural revolution" in African publishing and criticizes foreign publishers working in Africa, the aid programs of various Western governments, and similar foreign influences. It is clear that publishing was started by Western firms in Africa, and the orientation of these firms, which continue to function along with the new African-owned enterprises, remains largely Western. Not only is English or French used for the bulk of "serious" publishing in sub-Saharan Africa, but the very concept of the book is Western in orientation. Standards of design and printing, the nature of the distribution system, and other matters are Western and may or may not have relevance to the African scene. In addition, the continuing role of Western publishers in Africa has an impact on the development of indigenous publishing. Clearly, this is a topic which impinges on African publishing, but it was discussed by relatively few of the papers in this volume.

The papers themselves deal with varying aspects of publishing. The well-known Nigerian author Chinua Achebe looks at publishing from the point of view of a writer, while Joseph Okpaku, a Nigerian who heads the American publishing firm, Third Press, writes from the viewpoint of an African working abroad. Such topics as the role of university presses, problems of an emergent printing industry, state publishing in several African countries, problems of serial publishing in Africa, and problems of book distribution are dealt with in this volume. The book is heavily tilted toward Anglophone Africa, and the only French-language publisher represented in the papers is Editions CLE in Cameroon.

One of the major currents in African publishing is the increasing role of the state in book production and distribution. Papers dealing with state publishing in Zambia, Ghana, and Nigeria are included. The consensus of these papers is that state publishing is a necessary part of the African scene, particularly in the absence of a large indigenous private-sector publishing industry. Few of the authors seem to be concerned about the possibility of state control over the production of reading materials. Another element of African publishing which received attention in this volume is the missionary presses. These publishers were among the first to work in Africa and shaped the early years of much of the publishing scene. While the impact of the missionary houses has declined in recent years, these publishers still function actively on the African scene. Relatively little attention was paid to the large multinational publishers such as Macmillan, Prentice-Hall, and other firms which have considerable impact in Africa. The number of books imported from England or America is large and has not declined despite the growth of indigenous firms. Thus, Africa is characterized by different kinds of publishers, ranging from large state-owned enterprises to small private-sector publishers. The continuing impact of foreign publishers remains strong as well.

This volume leaves me with mixed feelings about the future of African publishing. On the one hand, the papers reflect a seriousness of purpose and a high level of

commitment of publishing. On the other, African publishing is very much in its early stage of development, and the odds against a fully autonomous and effective publishing enterprise being developed in the continent are high. The conference papers reflect a lack of specificity concerning both the direct problems and their solutions which does not bode well for the future. But perhaps this is inherent in the proceedings of conferences. Despite this pessimistic note, *Publishing in Africa in the Seventies* is an informative volume that will be useful to anyone interested in publishing in Africa and the Third World.

Philip G. Altbach, *State University of New York at Buffalo*

Five Centuries of Map Printing. Edited by DAVID WOODWARD. The Kenneth Nebenzahl, Jr., Lectures in the History of Cartography at the Newberry Library. Chicago: University of Chicago Press, 1975. Pp. xi + 177. $17.50. ISBN 0-226-90724-4.

That it is "the first work in its field," as indicated on the dust jacket of this book, is a bold claim for any recently published volume. Such primacy is all the more remarkable when we are dealing with an old and substantial area of human concern; but it is justified in the case of these essays on map printing. Hitherto no book-length study of the historical aspects of this subject has appeared, and it fills a significant lacuna, since for many collectors the aesthetic appeal of maps is as important as their geographical content. In fact, in dealing with the progress of printing generally, the map deserves serious attention because a number of reproduction techniques have reached a high degree of sophistication in the hands of the cartographic printer.

Naturally there is some periodical literature on this subject, such as R. A. Skelton's "The Map Printer and His Problems" in the *Penrose Annual* (1964) and Kenneth Nebenzahl's "A Stone Thrown at the Map Maker" in the *Papers of the Bibliographical Society of America* (55 [1961]: 283–88). It was Nebenzahl who made the volume *Five Centuries of Map Printing* possible through his establishment of the Kenneth Nebenzahl, Jr., Lectures in the History of Cartography at the Newberry Library, Chicago. The presence of David Woodward, who has a strong professional interest in map printing, as curator of the Hermon Dunlap Smith Center for the History of Cartography at the Newberry Library was a felicitous circumstance. Woodward not only served as editor of the volume under review, but contributed the chapter on woodcut technique. Other chapters on technique include: copperplate printing by Coolie Verner, lithography by Walter Ristow, and nineteenth-century miscellaneous processes by Elizabeth Harris. Modern processes, involving the application of photography to lithography, are discussed by Cornelis Koeman. The tone of the volume is set in the first essay by Arthur H. Robinson, the dean of American geocartographers, on the relationship of mapmaking to map printing.

Five Centuries of Map Printing is well illustrated with some 70 maps and diagrams which show the development of cartographic printing from its fifteenth-century European beginnings. Indeed, the volume's 6 essays stem specifically from the 1972 Nebenzahl Lectures held at the Newberry Library to mark the fifth centenary of the earliest printed European map, that of Isidore of Seville from a woodcut by Günther Zainer of Augsburg. When the lectures were delivered I felt that insufficient notice was given to the fact that Chinese map printing anticipated that of the West by at least three centuries, an opinion confirmed by the published essays. However, this is a common attitude in which Oriental contributions to knowledge are considered nonhistorical, because they influenced European or American technology, at best, only indirectly.

Those who teach cartography in universities and colleges have had less difficulty in finding material on map content than on cartographic technique. We are therefore

grateful that, at last, a book has appeared on the history of map printing. Because relatively little has been written on this subject previously, the bibliography in *Five Centuries of Map Printing* is necessarily small but will lead the reader to some useful sources. The chapter notes, which are gathered at the end of the book, serve to elucidate the more esoteric aspects of the subject. Librarians of large and appropriately specialized collections will wish to order a copy of this book, as will members of the worldwide fraternity of map collectors and those interested in fine printing. One peculiarity of the format of *Five Centuries of Map Printing* is the narrow inner margins in relation to the generous outer margins; perhaps this is to discourage photocopying!

An anniversary celebrated in a fitting manner through the support of scholar-patrons, the knowledge and work of the contributors, the skill of the editor, the hospitable institutional framework, and the expertise found in a great university press, working in concert, have produced a volume at once valuable and original.

Norman J. W. Thrower, *University of California, Los Angeles*

A Guide to Nineteenth Century Colour Printers. By GEOFFREY WAKEMAN and GAVIN D. R. BRIDSON. Loughborough: Pough Press, 1975. Pp. xii + 127. £8.00. ISBN 0-902813-04-8.

This book is described by its authors as "a straightforward guide to colour printers and their productions." Following as a natural outgrowth of Geoffrey Wakeman's *Victorian Book Illustration: The Technical Revolution* (Detroit: Gale Research Co., 1973), which played down the role of the artist and stressed the creativity and enterprise of the printer in the years 1837 to 1900, it is an alphabetized biographical directory of printers working in England who supplied color illustration and ornament for nineteenth-century books. There are 220 entries. The list does not attempt to be exhaustive; the source of the names is work examined by the authors. The emphasis is on this work, and a number of tempting book titles are thus brought to light. In many cases the work is described in detail and assessed for its reproduction quality.

All printing media are included. Some of the entries are such famous names as Ackermann in aquatint, Baxter and Evans in wood, Day and Hullmandel in lithography. Others are men of whom mention has been made in obituaries, advertisements, descriptions of books, or in such standard works on color printing as Burch, Hardie, Lewis and McLean; for these entries it has been a matter of adapting and consolidating scattered references. Of greatest interest are those ghost printers, real enough in their day, of whom there has been no mention in any printed work. Assembled and dated from their signed work in books, and with a little life blown into them from contemporary directory pages, they step forward onto the nineteenth-century scene. A little more than a third of the entries are such resurrected craftsmen; their names once established, more information is sure to be added to them. We live in an age of bibliographical rescue work, and it is good to see more names pulled back from oblivion.

For what it is trying to do, this book can be most closely compared with Sinclair Hamilton's *Early American Book Illustrators and Wood Engravers, 1670–1870* (Princeton, N.J.: Princeton University Press, 1958) and Harry T. Peters's *America on Stone* (Garden City, N.Y.: Doubleday, Doran & Co., 1931). In place of their leisurely, large-scale appreciation and enthusiasm, this book offers close-packed technical information aimed at the collector and printing historian but which also makes surprisingly fascinating browsing. Both earlier books are cumbersome in format; its small size makes the *Guide to Nineteenth Century Colour Printers* a much easier book to use and consult. Yet

in its physical aspect and layout it is so poorly put together as to constitute an insult to its subject matter. With a little more care, for the same expenditure, it could have appeared the valuable book that it is.

Sue Allen, *New Haven, Connecticut*

Old and Rare: Thirty Years in the Book Business. By LEONA ROSTENBERG and MADELEINE B. STERN. New York: Abner Schram, 1974. Pp. 234. $12.00. ISBN 0-8390-0131-2.

Bibliographical literature has been enriched in our time by America's antiquarian booksellers. To Charles P. Everitt's *Adventures of a Treasure Hunter,* Edwin Wolf and John F. Fleming's *Rosenbach,* E. Millicent Sowerby's *Rare Books and Rare People,* David Randall's *Dukedom Large Enough,* and David Magee's *Infinite Riches* can now be added these memoirs by Leona Rostenberg and Madeleine B. Stern.

In all of them, scholarship and human interest are readably and meaningfully wed. They could be used as texts in a course on the symbiosis of antiquarian booksellers and scholarly libraries. Not only have the coauthors of this latest work aided collection development in many of our research libraries, they have also contributed to biblioliterary scholarship with books and articles of their own.

Leona Rostenberg came the hard way to antiquarian bookselling. The "villain" in her way was Professor Lynn Thorndike, Columbia University's renowned medievalist. He refused to accept her dissertation on the Strasbourg printers of the Renaissance, although she had passed her doctor's orals with distinction and spent a fruitful time researching in the archives of the Alsatian capital. In despair she apprenticed with Herbert Reichner, the scholarly refugee bookseller from Austria and editor of the *Philobiblon,* who proved a choleric taskmaster. It was her knowledge of classical and modern languages that made her most useful to him, although she was also able to clear shipments through customs, no mean feat then and now. Although she calls this chapter "Five Years in Siberia," Rostenberg recognizes that it was an educational experience that supplemented her Columbia seminars and her research in Strasbourg. She also learned that there is no substitute for direct contact with books, and that bibliographical mastery comes from the tactual and optical as well as from the intellectual sense—plus a bit of serendipity.

In 1943 Leona Rostenberg, urged by her friend Madeleine Stern and against the wishes of her loving parents (trade is for men), founded her own business. "Mady" Stern soon joined her, and ever since then they have formed a happy partnership, traveling, buying, cataloging, and selling rare books to libraries and collectors and at the same time contributing to their respective fields of historical bibliography and feminist Americana.

Their reminiscences in separately initialed chapters make a lively story, rich in anecdotes, titles, prices, and people. They pay homage to the great acquisitioners: William A. Jackson of Harvard, Donald Wing of Yale, John Fall of the New York Public, Mabel Erler of the Newberry, and Molly Pitcher of the Folger. Colleagues in the trade also are present: Irving Davis, Ifan Kyrle Fletcher, Bill Fletcher, Clifford Maggs, Charlie Harris, David Low, Harold and Olive Edwards, Percy Muir, Peter Murray Hill, Winnie Myers, and others in Britain, France, and Italy. There is also the formidable Miss Hamel of Grafton and Co., who tyrannized her male employees and warned her customers not to lay hands on the books.

A warmth of spirit and generous goodwill pervades this book. These two scholarly booksellers have led rich, active, and useful lives, and their memoirs are a kind of thanksgiving. Books such as theirs and the others cited might well be required reading

for library school instructors and students. They could help restore humanistic and bibliographical values to a library world obsessed by acronymic nonsense, endless reorganizations, "goals and objectives," and other presently fashionable nonsense.

Lawrence Clark Powell, *University of Arizona*

Essays on Information Science and Libraries: Festschrift for Donald Urquhart. Edited by KEITH BARR and MAURICE LINE. Hamden, Conn.: Linnet Books; London: Clive Bingley, 1975. Pp. 211. $12.50. ISBN 0-208-01370-9.

This is a good example of what a Festschrift should be. It contains three addresses given at honorary degree ceremonies for Donald Urquhart, a bibliography of his published work, and a number of diverse essays, all of which acknowledge his contribution. The record is impressive, and the evidence to support the claim that "the twentieth century, in Donald Urquhart, has given us a librarian-innovator to match Panizzi" is overwhelming. For those interested in Urquhart's place in library history, the book is essential reading, but it is much more than that. It is one of the few publications on library and information science and services which is really concerned with the future of those services.

The list of contributors should be sufficient to ensure the commercial success of the book. They are just the people contributing new insights into subjects of concern to all of us. Every essay in this book raises problems, asks questions, and suggests topics which need investigation. With Urquhart's retirement, and with the usual mutterings of gloom so prevalent in our profession, some of us have been worried about the future of the British Library. The five contributions from members of its staff show that there is no cause for worry. With people like H. T. Hookway, M. B. Line, K. P. Barr, D. T. Richnell, and B. J. Perry in charge it must become a dynamic and user-oriented institution.

The last quarter of the twentieth century will not be a comfortable one for librarians. Not only must we tame and use the computer, but we are also likely to see the abandonment of the old distinction between types of library. The acquisitive instinct, which has been our outstanding characteristic, may become a sin rather than a virtue. Increasingly we shall be asked to justify expenditure in terms of user needs and economic efficiency. In this context essays by K. A. Stockham on public library systems, B. J. Perry on information science research, and B. C. Vickery on scientific and technical information are relevant.

As for the acquisitive instinct, consider B. J. Enright's assertions in his essay on "Bibliochlothanasia" that "academic concern centres more around accidental acquisition than on gaps," and we are in danger of having libraries from which the most useful books have been stolen and the less useful remain," or finally his quotation from the final report of the Project for Evaluating the Benefits from University Libraries that "weeding the stock" in university libraries is "the ungrasped nettle."

One of the best essays in the book is that by Wilf Saunders on "Professional Education: Some Challenges for the Next Decade." His statement is clear and uncompromising. "It is taken for granted that [professional education] will be a unified whole which accommodates both library and information science." He looks back at the last decade (1964–74) as one of excitement and progress and sees the decade ahead as less exciting. But the sober problems which he lists are real enough: "Developing the theoretical framework of our subject, increasing the duration of our courses, offering more scope for part-time study, expanding and improving our contribution to continuing education."

The essay to read for sheer pleasure is Maurice Line's "Demystification in Librari-

anship and Information Science." It is a serious essay acclaiming Donald Urquhart as "the grand demystifier of our times," and it is a serious criticism of "the mysterious nature of librarianship" which "is further enhanced by the shade-seeking nature of some librarians." He criticizes the bandying about of acronyms, the whole MARC mystery, and especially the discovery of numbers and models: "One cardinal rule of writing in numerate librarianship is: never use plain words when mathematical expressions can be used."

Limitations of space prevent the discussion of each of the 14 essays, but all are worth reading. Gordon Williams compares interlibrary loan in the United States and the United Kingdom; E. B. Ceadel writes about the importance of cooperation between librarian and architect in the planning of libraries; W. Ashworth discusses the new special librarianship; K. Barr writes on the gradual acceptance of the National Lending Library; Mrs. K. Kalaidziera from Bulgaria writes about national scientific collections; and H. L. Tveterås of Norway suggests that Urquhart's next assignment should be a European Lending Library.

This is an excellent book, graceful in its tributes to Urquhart, remarkably free from platitudes or jargon, full of debatable statements, and containing some of the best writing from the leaders of our profession.

Jean P. Whyte, *Monash University, Australia*

Reader in Library Systems Analysis. Edited by JOHN LUBANS, JR., and EDWARD A. CHAPMAN. Reader Series in Library and Information Science. Englewood, Colo.: Microcard Editions Books, 1975. Pp. xii+471. $18.95. ISBN 0-910972-45-1.

This book is a collection of 34 papers, all of which have been published before; it is divided into 5 major sections, labeled "Historical Aspects of Library Systems Analysis," "General View of Library Systems Analysis," "Ideas, Concepts, and Procedures within Systems Analysis," "Applying Systems Analysis Concepts," and "Electronic Data Processing and Systems Analysis."

Each section is preceded by a brief (several page) introduction written by the editors. There is also a table of contents, a section called "Selected Bibliography of References in Library Systems Analysis," and a list of contributors to the book, with title and position given for each. There is no index.

Within the framework of my own interests and expectations in library systems analysis this book has nothing to offer. I would not assume that such a fact was worth mentioning unless I thought that there might be others who share my interests and expectations. I should therefore clarify what these are.

The term "systems analysis" eludes any precise definition; suffice it to say here that it is concerned in some sense with the analysis of library operations. I would personally be inclined to begin any such analysis with questions something like, How do I measure or determine the effectiveness of a library in serving its users? What options are available to the management of a library for influencing such effectiveness? What are the cost implications of these options? What kind of information about library operations is regularly needed in support of management decisions?

I could find no substantial discussion of these issues anywhere in the *Reader.* Only 1 article, by A. Graham MacKenzie, even expresses a similar philosophy; that article is quite unlike the rest of the book and calls for further comment later.

In order to illustrate more concretely just what I would expect in the way of a "substantial discussion," suppose we consider the above questions in the context of just one aspect of library operations, namely, a circulation subsystem. The main purpose of a circulation system is to provide a means of making books available to the users of

the library. A reasonable measure of performance might be the percent of requests that can be immediately fulfilled. The central problem is that of "circulation interference"—the book you want is checked out by someone else. Management has many options in setting policy with respect to loan period, and the purchase of multiple copies, which can strongly affect the availability of books. A well-known phenomenon of particular importance to the systems analysis of libraries is the fact that a large fraction of the circulation tends to be concentrated in a small part of the collection, which therefore tends to be heavily used, and predictably so. Thus if a loan period is established which varies according to a book's expected frequency of use, with frequently used books assigned a shorter loan period, the average percentage of time a requested book is available can be substantially increased. An information system to support policy decisions concerning circulation should therefore include certain use-frequency data for each book, as well as a periodic report of the level of effectiveness, as defined above, with which the system is functioning.

Although a half dozen or so of the articles in the *Reader* deal directly or indirectly with circulation systems, none deals with a "systems approach" to the problem in anything resembling the terms I have discussed. Two articles include a few pages of tables and discussion of circulation statistics; they mention briefly a few uses, such as purchase of duplicate materials, to which such information can be put.

In my opinion, education for systems analysis should be heavily oriented toward problem solving. One learns by doing, not by absorption. There are no problems or exercises in the *Reader,* nor does its subject matter seem to lend itself to such an approach.

One might assume that papers deserving of selection for a reader would also tend to be those currently referred to or cited extensively by others in the literature. This appears not to be the case here. A check of the 1974 Science Citation Index indicated that 31 articles were not referred to at all, and the remaining 3 were cited once each. Possibly there were citations in fields (such as business) not well covered by the SCI, but SCI does include major journals in information science, library science, management science, operations research, engineering, cybernetics, and computer applications.

It seems likely that the editors of the *Reader* have a view of library systems analysis quite different from mine. I do not think that by chance alone they could have missed everything I have touched upon here.

I do not claim to have reviewed this book. Instead I have attempted to identify at least the existence of a completely different view of "systems analysis." That view, incidentally, is very accurately reflected in one 7-page article in the *Reader* entitled "Systems Analysis of a University Library" by MacKenzie, in which he describes briefly, without going into any real substance, a series of studies carried out at the University of Lancaster. That project has generated a number of substantive and interesting articles and reports representative of "systems analysis" as I have described it here. None of these are included in the *Reader.* MacKenzie's opening paragraph seems worth quoting:

> In presenting some account of the work being done at Lancaster on the systems analysis of a university library, I wish to make it quite clear at the beginning what I do not mean. We are not concerned with "scientific management" as defined in the recent book by Dougherty and Heinritz—time and motion study, work measurement or work simplification, the re-design of forms and stationery, and all the other paraphernalia of low-level industrial or commercial management. These admittedly have their place, but only a minor one: it profits a library little if its procedures are all perfect, but all directed to the wrong ends.

I have quoted it because what MacKenzie says his article is *not* about seems to me pretty much what most of the rest of the *Reader is* about.

Don R. Swanson, *Graduate Library School, University of Chicago*

The Administrative Aspects of Education for Librarianship: A Symposium. Edited by MARY B. CASSATA and HERMAN L. TOTTEN. Metuchen, N.J.: Scarecrow Press, 1975. Pp. xviii + 407. $14.50. ISBN 0-8108-0829-3.

The temptation to invent alternative subtitles for this collection of 24 papers on library education is almost irresistible. "What Every New Dean Should Know Right Away," "What to Do Until the Committee on Accreditation Comes," or "How to Stop Worrying Because Nobody Else Is Doing Any Better Than We Are" are all possibilities that come readily to mind. None of these is entirely frivolous, because this is a multipurpose volume that may serve a variety of needs for a variety of readers, as is commonly the case with such "state of the art" surveys.

A brief overview of highlights in the historical development of education for librarianship in America is given by C. Edward Carroll, and is followed by a summary of the background of the current (1972) American Library Association (ALA) *Standards for Accreditation* of graduate library education programs by Dean Russell E. Bidlack, who chaired the subcommittee that drafted them and who is currently concluding a term as chairperson of the Committee on Accreditation. The heart of the collection comprises 20 essays arranged under the six major ALA standards for program appraisal. Six papers center on "Program Goals and Objectives," 2 deal with "Curriculum," 1 with "Faculty," 4 with "Students," 6 address the complex standards grouping of "Governance, Administration and Financial Support," and 1 paper is concerned with "Physical Resources and Facilities." The collection concludes with a useful set of practical suggestions on how to prepare for an accreditation visit by Dean George S. Bobinski of the State University of New York at Buffalo, and a brief but provocative epilogue by coeditor Mary B. Cassata aptly titled "Library Education: Leader or Follower?" The full text of the *Standards for Accreditation, 1972* is appended for ready reference.

With one exception, the essay by Elizabeth W. Stone on the "Role of the Academic Institution in Continuing Library Education," extracted from her longer 1974 study of continuing library education undertaken on behalf of the American Society for Information Science ERIC Clearinghouse on Library and Information Sciences, all of the papers were prepared originally for this volume. At least 7 of them are based directly on recent survey data, gathered for the most part in the spring of 1974.

By its very nature, this kind of book seemingly defies an holistic response by the reader. One reason for this lies in the fact that so many of the papers are largely reportorial in character. About their contents, one can state only that past events and/or current conditions are, in general, accurately set forth. The extensive documentation appended to many of the essays enhances their potential value, serving to identify most of the key documents and seminal writings on American library education, past and present.

One tends to single out the few individual papers in the collection that either address specific educational issues of particular urgency or reflect unusual perspicacity in generalizing from a range of disparate experience. Thus, Jesse H. Shera, dean emeritus of the library school at Case Western Reserve University, in typically incisive and aphoristic fashion, captures our attention with such arresting observations as, "No school can rise above the quality of its faculty . . ." (p. 300). Similarly, Howard W. Winger, dean of the University of Chicago Graduate Library School, offers much that

is sound and useful concerning the necessary relationship between effective teaching and scholarly productivity of the faculty in the graduate professional school. Margaret Chisholm's candid review of our schools' collective failure either to identify explicit program goals and objectives or to enumerate these in strict priority order, and Fred C. Pfister's insistent reminder of the unresolved and neglected problem of articulation between undergraduate and graduate library education programs, both draw attention to chronic shortcomings that increasingly demand attention in a time of contracting employment markets and shrinking institutional resources.

It is to be hoped that this collection will be widely and thoughtfully read, not only by library educators but by practitioners as well. The status and quality of library schools must exert a significant influence on the quality of library service. It is also to be hoped that other readers will be struck, as I was, by the symmetry between the quotation in Carroll's opening essay reporting the view of one participant in the 1909 Breton Woods Conference of the American Library Association that "it is a principle underlying all schools of practical instruction that they must follow and not lead in the development of a profession" (p. 9), and Cassata's concluding challenge to the current generation of teachers: "Is library education several giant steps ahead of what happens to be current in professional thinking?" (p. 379). Therein, indeed, lies the rub! To the extent that the present collection points up the need for library education to both reflect and shape professional practice, it will have performed a useful service.

Thomas J. Galvin, *University of Pittsburgh*

World Trends in Library Education. By GERALD BRAMLEY Hamden, Conn.: Linnet Books; London: Clive Bingley, 1975. Pp. 234. $10.00. ISBN 0-208-01368-7.

Bramley, author of the earlier *A History of Library Education* (Hamden, Conn.: Archon Books, 1969), is a lecturer at the Loughborough School of Librarianship and has also taught at the University of Liverpool Library School. Here he examines the formal methods for the preparation of librarians in the United Kingdom, United States of America, Canada, Australia, New Zealand, West Germany, Soviet Union, West Africa, East Africa, and Scandinavia, with brief references to several other countries. Latin America, Asia, and the Middle East are not covered.

The author bases his work upon two important phenomena: (1) the rapid emergence during this century of formal library education and (2) the major influences of American and British systems of library education upon librarianship throughout the world and especially in the developing countries.

Bramley has brought together considerable information and organized it clearly and well. The description of the library profession and the role of the professional associations, and the methods by which librarians are prepared and certified or accredited in the English-speaking countries (America, Canada, Australia, and New Zealand) are full and clearly presented. Bramley acknowledges the strong American influence, especially since World War II, in strengthening professional status and prestige largely through raising the educational requirements for admission to librarianship. Bramley also notes North American influence on British higher education generally, as shown in the broadening of educational opportunity through creation of many new universities and technical colleges and the breakdown of the tightly controlled, elitist nature of the few great classical universities. This movement culminated in the advent of the Council for National Academic Awards (academic degrees), which "destroyed the shibboleths which had, for so long, supported the creaking educational structure of the [British] Library Association."

The major characteristic of library education in the English-speaking world during

this century has been, the author states, "the movement away from the examination/certification system towards adoption of the accrediting role pioneered in the United States." His summary of the position pro and con for both systems is perceptive and accurately reported, although his observations are sometimes amusing to an American reader: "Non-Americans can only marvel at the elaborate rituals which the COA [Committee on Accreditation] . . . introduce into the process of accreditation."

Two matters not touched upon in the book may be worth noting. British librarians, as has been frequently observed, do not seem to be aware that most students attending a graduate professional institution in North America personally pay for their education, unlike the British student who rarely attends any advanced school unless he is fully supported by a grant, usually from his local government. The second point has to do with the need for the establishment of standards whereby the training and the resulting qualification can be fairly equated among the several countries.

Bramley, except for his description of the British scene, has used, for the most part, secondary source material. As he has not provided a bibliography, it must be assumed that the references appended to each chapter constitute his sources. While these are good, they are not comprehensive and probably explain why some matters are not fully treated and the discussion is not as well rounded as would be useful in such a work.

The selective nature of the sources used, whether by accident or conscious choice, perhaps accounts for the absence of many names prominent in the development of education for librarianship. The reader will look in vain for mention of J. C. Harrison and Roy Stokes in England; Robert Leigh, Sarah Rebecca Reed, Phineas L. Windsor, and Herbert Goldhor in the United States; Autoun Ogunshege in Nigeria; and René Ferdinand Malan Immelman in South Africa, to mention only a few. Nor is the influence of the Association of American Library Schools (including Canadian schools) recognized.

Some minor criticisms of a generally competent work: the index is quite incomplete, especially in personal names; proofreading or manuscript editing was careless, with words omitted or misspelled; and Laurel Grotzinger is referred to as male. However, these do not affect the substance of the book.

Bramley's book will be useful in library schools, but, clearly, the definitive treatment of this subject has yet to be written.

Harold Lancour, *University of Pittsburgh*

The Shaping of American Library Education. By CHARLES D. CHURCHWELL. ACRL Publications in Librarianship, no. 36. Chicago: American Library Association, 1975. Pp. vii + 130. $8.50 (paper). ISBN 0-8389-0170-0.

This slender volume by Churchwell supplements two previously published histories on education for librarianship. Sarah K. Vann's *Training for Librarianship before 1923* (Chicago: American Library Association, 1961) covers the history of education for librarianship from its beginnings in the nineteenth century through the second decade of the twentieth. Skipping two decades, C. Edward Carroll's *The Professionalization of Education for Librarianship, with Special Reference to the Years 1940–1960* (Metuchen, N.J.: Scarecrow Press, 1970) picks up the thread of the history by covering the two decades of the forties and fifties. Although not implied in the title of Churchwell's monograph, it fills the gap by covering the years 1919–39. All three titles are supplemented by Donald G. Davis's history, *The Association of American Library Schools, 1915–1968: An Analytical History* (Metuchen, N.J.: Scarecrow Press, 1974).

Churchwell's volume is based upon his doctoral dissertation, "Education for Librar-

ianship in the United States: Some Factors Which Influenced Its Development between 1919 and 1939," which was completed in 1966 at the Graduate School of Library Science of the University of Illinois.

The research methodology for both the dissertation and the present monograph was derived from the essay, "Historical Development for Librarianship in the United States," by Louis R. Wilson (in *Education for Librarianship*, ed. Bernard Berelson [Chicago: American Library Association, 1949], pp. 44–59). Wilson focused attention on ten factors which influenced the development of education for librarianship from the establishment of the School of Library Economy at Columbia in 1887 until 1948. Similarly, the purpose of Churchwell's book is to "analyze and explain the 'movements, events and influences' that made distinctive contributions to the development of education for librarianship between 1919 and 1939" (p. 4). According to Churchwell, the study has two basic propositions: "that the status of education for librarianship in 1939 was the product of the interactions between traditional concepts of library education and emerging new forces" and "that the failure to develop an acceptable system of library education was due to the absence of a unifying force and to attempts to satisfy the competing and specialized needs of librarianship" (pp. 4–5).

To study these propositions, Churchwell considers the contributions of four organizations to the development of library education during the two decades: the American Library Association (ALA) Temporary Library Training Board, the ALA Board of Education for Librarianship, the Carnegie Corporation's Ten-Year Program, and the Association of American Library Schools. Churchwell does not place his study within the broader context of developments in either postsecondary education or professional education during the 1919–39 period. Rather, in short individual chapters on each organization, he presents a brief history of it, an overview of its activities, and a concluding statement concerning its contribution to library education during the two decades under discussion. In the final chapter, he summarizes the accomplishments and discusses the problems which remained unsolved at the end of the period.

Churchwell concludes that by appointing the Temporary Training Board in 1923, the ALA "abandoned its irresolute role in the field of library education and established itself as a potentially powerful force for shaping the course of development of education for librarianship" (p. 25). In spite of the creation of a permanent Board of Education for Librarianship in 1924 and the Carnegie Corporation's Ten-Year Program to provide financial assistance to library schools, the ALA never realized its potential. Churchwell states, "But these potentials were not fully exploited because the forces and movements often operated without the benefit of an agency with sufficient power to coordinate and use them to develop an articulated library education system" (p. 101).

One would feel more comfortable about Churchwell's conclusions if he had placed the study within the broader context of trends and developments in postsecondary and professional education during the period and if he had relied more on primary sources. I believe that he might have reached different conclusions if he had not used a number of secondary sources for his information. The use of committee reports published in journals is excusable only if the original proceedings and other archival materials are not available.

On the whole, the typography and the format of this slender blue and white paperback is pleasing. However, I found the placing of the footnotes at the end of the entire text frustrating.

Lucille M. Wert, *University of Illinois*

Bibliothekarische Ausbildung in Theorie und Praxis: Beiträge zum 25 jährigen Bestehen des Bibliothekar-Lehrinstituts des Landes Nordrhein-Westfalen am 4. Februar 1974. Edited by RUDOLF JUNG and LUDWIG SICKMANN. Arbeiten aus dem Bibliothekar-Lehrinstitut des Landes-Westfalen, Heft 45. Köln: Greven Verlag, 1975. Pp. viii+311. DM 42 (paper). ISBN 3-7743-0545-5.

This collection of articles dealing with library training in theory and practice was issued on the occasion of the twenty-fifth anniversary of the Cologne library school, Bibliothekar-Lehrinstitut des Landes Nordrhein-Westfalen (BLI). Most of the articles were contributed by present members of the BLI faculty. The joint editors, Rudolf Jung and Ludwig Sickmann, each supplied an article plus materials for the appendix.

The first article, by Wilma Klompen, traces the development of the BLI from its inception to the present day. We learn that the school began modestly as a continuation of the municipally maintained Westdeutsche Büchereischule, which in 1949 became a state-supported library education institute. When the library training agency became a state institution its scope was extended. While under municipal control the school trained largely public librarians. As a state institution it offered training to three categories of librarians: (1) *Hoherer Dienst an wissenschaftlichen Bibliotheken* (higher service at scholarly libraries); (2) *Gehobener Dienst an wissenschaftlichen Bibliotheken* (advanced service at scholarly libraries, meaning the level immediately below the higher service—this category is also called *Diplombibliothekare an wissenschaftlichen Bibliotheken*); and (3) *Diplombibliothekare an öffentlichen Bibliotheken* (*Diplom* librarians at public libraries). This was the first time in Western Germany that a teaching agency providing training for librarians of different categories and levels had been established. It was made possible by Christine Teusch, then minister of culture of Rheinland-Westfalen. The BLI has grown tremendously since its inception in 1949—from fifty-five students to about 600, and from three full-time and about fifteen part-time faculty members to sixteen full-time and about thirty part-time faculty members. Today it is the largest and most comprehensive library school in Western Germany.

Many of the papers deal in large part with the materials and methods the authors use in teaching their respective subjects, though with different emphases. Some stress methodology, some materials, some give both about equal space, and some give considerable attention to the subject itself. For instance, Werner Grebe, who writes on *Trivialliteratur,* which is also known by such designations as kitsch or lowbrow literature, describes its characteristics by evaluating the divergent views and interpretations of many literary critics and language scholars.

Trivialliteratur was one of the areas added in recent years to the curricular offerings. Among the others were electronic data processing (automation), described in detail by Ellen Branthin, and comparative librarianship, written up here by two team teachers, Gisela Kirfel and Joachim Rechtmann. In several instances where new subjects were introduced, the authors note the support they received from Werner Krieg, director of the BLI until his retirement in 1973. Several more articles could be mentioned for their thoughtful and informative statements. But it must suffice here to say that, in addition to those noted above, there are valuable studies dealing with such topics as: cataloging of maps and charts; the place of the older book in library education; history, law, and administration as teaching fields in library training; characteristics of each of the three categories of librarians, their qualifications, their professional tasks, and their proper training; the role of the BLI in continuing education; the library school library; and the publications of the BLI.

During the last decade German library education and training have undergone many changes. Most curricular changes have been necessitated by the nationally adopted regulations concerning the training of public librarians. Questions arise

which need further study—as, for instance, questions relating to the training of the *Diplombibliothekare* at scholarly libraries. Should their training be increased so that it is equal to that of the *Diplombibliothekare* at public libraries? Should the gap in training between the *Diplombibliothekare* at scholarly libraries and the librarians of the higher service at scholarly libraries be narrowed, and should the two categories gradually be fused into one? Should all three categories of librarians be combined into one? Another important problem is whether library science should be given increased consideration at the expense of general academic subjects.

In Germany, state authorities usually make the final binding decisions regarding these and similar matters. Those in decision-making positions will be greatly aided by the wide-ranging discussions in the Festschrift. The investigations can also be used to great advantage by German library school instructors as guides in planning their courses. Librarians outside of Western Germany will find many of the papers both thought provoking and useful, because they deal with perennial and basic library problems.

Fritz Veit, *Chicago, Illinois*

Überregionale Literaturversorgung von Wissenschaft und Forschung in der Bundesrepublik Deutschland: Denkschrift. By the BIBLIOTHEKSAUSSCHUSS DER DEUTSCHEN FORSCHUNGSGEMEINSCHAFT. Boppard: Harald Boldt Verlag, 1975. Pp. 116. (Paper.) ISBN 3-7646-1621-0.

The Deutsche Forschungsgemeinschaft (German Research Society) is an association of representatives of some forty West German universities, learned societies, and research institutions. Originally founded in the early 1920s (when it was identified as the Notgemeinschaft der Deutschen Wissenschaft, that is the Emergency Society for German Science) as a means of supporting and advancing German research following the setbacks caused by World War I and its aftermath, it remained in existence until the collapse of Germany in 1945. In 1949, it was reestablished under circumstances not unlike those of its original founding. Its most urgent problems of the reconstruction years are long since past, and the Forschungsgemeinschaft continues as a permanent and extremely important part of German scientific and academic development. Though it is supported by funds from the federal government, the individual states (*Länder*), and from private foundations and industry, it is an autonomous agency. Its aims are to provide financial support for scientific research, encourage cooperation among research institutions, cultivate communication between German and foreign scientists, and to advise the government agencies and Parliaments of the *Länder* in matters relating to the advancement of science (see *Deutsche Forschungsgemeinschaft: Aufbau und Aufgaben*, 5th ed. [Wiesbaden: Franz Steiner Verlag, 1963]). It works closely with the Wissenschaftsrat (Science Council), which is a formal intergovernmental agency charged with coordinating plans of the individual states into an overall national plan for the development of science and the arts. Both organizations have been major forces in the development of academic and research libraries in West Germany during the past quarter century.

The memorandum in hand, the most recent report of the Forschungsgemeinschaft's Library Committee, reviews, updates, and advances a national acquisitions plan and system of resource sharing which started in 1949. West Germany now has an elaborate working system for bibliographic control which aims to insure that all pertinent resource materials will be systematically acquired and made accessible to researchers. It is a complex system, and the present work deals only with the supraregional responsibilities of those libraries (twenty in number at the present time) charged with the

acquisition of material in certain assigned subject areas. For example, the University of Tübingen has the subject area, theology; Göttingen has pure mathematics; the Bavarian State Library has musicology. Around 100 special subject areas have been identified, along with several areas defined by type of material (for example, the State Library in Berlin has the responsibility for foreign newspapers). It is a highly decentralized system, and its success depends not only on adequate funding and the quality of individual acquisitions programs but on a system of regional union catalogs and an efficient interlibrary loan network. To this end, the Forschungsgemeinschaft has provided more than a series of proposals—it has provided substantial financial aid for both acquisitions programs and personnel. In reviewing the current state and future progress of the system, the Library Committee has dealt realistically with the problems involved and at the same time established high standards for development in the immediate future. For the most part, library development in Germany during the past quarter century has proceeded in a systematic and orderly fashion, and at times with considerable imagination and boldness. All signs suggest that West Germany will continue to make remarkable progress in dealing with national network development. Librarians in the United States, particularly academic librarians involved in network development, will find that this work will repay careful study.

Gordon Stevenson, *State University of New York at Albany*

Approval Plans als Instrument der Literaturerwerbung. By EKKEHARD ARNOLD. Bibliothekspraxis, vol. 14. München: Verlag Dokumentation, 1975. Pp. 102. DM 24. ISBN 3-7940-4014-7.

This study dealing with approval plans (the author of this study has used "approval plan" in the book's title and in the text because there is no exact German equivalent for this English language term) as devices for acquiring library materials was undertaken to meet a practical need. In 1973 some well-known American dealers, including Richard Abel & Co. and Baker & Taylor, visited a number of German academic and other scholarly libraries to interest them in adopting approval plans. The approval plans would cover mainly literature in English and other non-German languages. Several German libraries began experimenting with the use of such programs, usually in a rather limited and tentative way.

It was felt that the German librarian could better understand the operation of approval plans if he could consult a systematic account of the workings of this scheme in the United States, where it has gained increasing popularity. Ekkehard Arnold's book is such an account, detailing the American experience.

Arnold based the first, and main, part of his analysis on American library literature, which he searched most thoroughly and judiciously. He identified the pros and cons of approval plans, noting that the majority of the institutions had a positive attitude toward them. Librarians cited such factors as speedier delivery, saving in clerical and professional time, and more comprehensive coverage within the framework of an established order profile. Arnold's analysis revealed further that not only large but also medium-sized and small libraries could use approval plans to advantage. Since the typical American approval plan transfers the responsibility for book selection from the professional library staff to a dealer, Arnold gives special attention to discovering staff reaction.

Inasmuch as library practices in Germany differ in various respects from those prevailing in the United States, Arnold believes that even a pattern which has proven highly successful in the United States cannot be applied without modification in Germany. One of the basic questions is the role of the German librarian in book

selection. Would the librarian be willing to relinquish this responsibility to a book dealer? Another problem to which Arnold points is that of differences in funding. Amounts available to German academic libraries have usually been smaller than those at the disposal of their American counterparts. In Germany, therefore, book selection has to be more rigorous and often can include only a limited portion of the output in a subject field. The percentage of items, in comparison with the total output in an area, may be so small that it would not be sufficiently profitable for the dealer to make an approval plan contract. Both for financial reasons, and in order to have the staff retain their book selection prerogatives, it might, in Arnold's view, be practical for a library to enter into a "New Title Information Program" agreement with a dealer. This would involve the sending of announcements of new titles to the subscribing library, whose staff would then make their selections.

Part 2 includes descriptions of the approval programs of two dealers (Richard Abel & Co. and Otto Harrassowitz), an example of a purchase agreement, and comparisons between the cost of items acquired by single orders and by approval plan.

Arnold's comprehensive, objective, and well-written investigation accomplishes its main goal, which is to give a full picture of approval plans as they have been developed, applied, and evaluated in the United States and as they may be modified and adapted to German requirements. (It should be noted that the firm of Richard Abel & Co. failed in January 1975. This is bound to have far-reaching implications for the scope, form, pricing, and adoption of approval plans in the United States and abroad. For a fuller discussion, see H. Paul Conditt, "The Rise and Demise of Richard Abel and Company," *PNLA Quarterly* 39 [April 1975]: 10–14.)

Fritz Veit, *Chicago, Illinois*

Bibliography in Theory and Practice. By M. L. CHAKRABORTI. 2d ed. Calcutta: World Press, 1975. Pp. xv+448. $7.50.

With the work of editors like W. W. Greg and R. B. McKerrow in the first half of the twentieth century, the bibliographical study of the physical characteristics of books became separated from the mainstream of librarianship. Complete separation never occurred in Great Britain and the Commonwealth because certification of librarians required knowledge about the history of printed books and the means for describing them. These requirements occasionally led to the provision of textbooks to help students gain an introduction to bibliography. The best known is Arundell Esdaile's *Manual of Bibliography* (London: George Allen & Unwin, 1931 and later eds.; revised by Roy Stokes, 1967). Other textbooks include Norman E. Binns's *An Introduction to Historical Bibliography* (London: Association of Assistant Librarians, 1953; 2d ed., 1962) and E. W. Padwick's *Bibliographical Method* (Cambridge: James Clarke Co., 1969).

M. L. Chakraborti's *Bibliography in Theory and Practice* is the newest member of the group. First published in 1971, this "revised and enlarged" edition adds nearly 100 pages of new material. As in the earlier edition, Chakraborti wants to provide students with a "suitable text-book on Bibliography covering its theoretical and practical sides as also its various ramifications—physical and historical, analytical and systematic" (p. viii). His list summarizes well the different kinds of bibliographical practices that have evolved, but it does not touch on the main requirement of these textbooks—that is, the need of their authors to blend two different fields of inquiry: bibliography, which is the technique for analyzing and describing the book and its parts; and the history of the book, which records the chronological development of the book and its parts.

The ability to understand and communicate these closely related fields determines a textbook's uccess or failure. *Bibliography in Theory and Practice* does not exhibit a thorough understanding of the physical book. Nowhere is this more evident than in the book's method of compilation. Passages and illustrations are taken from many sources (Chakraborti admits he "makes no claim to originality of thought" [p. ix]) and are simply conflated in a desultory manner. This is merely confusing when the book discusses theoretical issues, but becomes disconcerting, for example, when printing practice is outlined in the following incorrect order: press work, perfecting, registering, distribution of type, imposition (formats are also discussed on pp. 301–4), and proof correction (pp. 144–49).

Although there is a need to cover many subjects in an introductory textbook, Chakraborti's book seems to have too many, so that important areas are treated in a perfunctory way. For example, bibliographical description, which is fundamental to historical cataloging and classification, is discussed in a single, 12-page chapter. Even more abbreviated is the section on page and fold collation, which is less than a page—this in light of the formularies advanced by W. W. Greg and Fredson Bowers!

Some parts of the book do stimulate interest, especially the ones on Indian printing history, but these too can be disappointing, especially when interesting passages are not documented, or when they are marred by many errors of accident and substance.

In the main, efficacious learning by the student is possible only by means of a coherent presentation of the bibliographer-historian's work. And even then the student does not "learn" bibliography, as such, but becomes skillful in this practical science by doing it. The successful textbook is a manual that leads him through the intricacies of bibliographical method by means of carefully arranged, historically appropriate examples. The second edition of *Bibliography in Theory and Practice* is still unable to do this.

Paul S. Koda, *University of North Carolina at Chapel Hill*

The Psychology of Reading. By ELEANOR J. GIBSON and HARRY LEVIN. Cambridge, Mass.: M.I.T. Press, 1975. Pp. xii + 630. $18.95. ISBN 0-262-07063-4.

There is something courageous about two renowned scholars turning their backs even slightly on intellectual positions they have held for years. This is what Eleanor Gibson and Harry Levin do to some degree in *The Psychology of Reading.* In part 1, 8 chapters of review insightfully treat perceptual learning, cognition, linguistic concepts, writing systems, and word perception. These areas are what Gibson and Levin know and are known for. Part 2 gets into reading itself and into the position of rejecting some of their previously held ideas. They treat prereading skills, beginning reading, the transition to skilled reading, and learning from reading conventionally according to the canons of cognitive psychology. It is in the chapter on models of reading, however, that they show their courage by venturing out on thin ice. Gibson abandons her special blend of empiricism and Hullian philosophy that she artfully expressed in *Principles of Perceptual Learning and Development* (New York: Meredith Corp., 1969), a book that sits next to Neisser, Hilgard, and Guilford on my shelves. Levin chucks analysis by synthesis, an idea formulated by Henri Bergson in *Matter and Memory* (New York: Macmillan Co., 1911), advanced by Ulric Neisser in *Cognitive Psychology* (New York: Appleton-Century-Crofts, 1967), and eloquently related to reading by Levin and Eleanor Kaplan in "Grammatical Structure and Reading" (*Basic Studies on Reading,* ed. Harry Levin and Joanna Williams [New York: Basic Books, 1970], pp. 119–33).

What do they use to replace their previously espoused ideas? In chapter 12 of part 2, we are led through a curious mosaic of reasoning to introspection, terrain that has been tabooed in psychology for decades. Gibson did not even note introspection in her index in *Principles of Perceptual Learning and Development.* Levin's research has been soundly empirical to this point. Their courageous move involves reports of what readers think while reading. The outcome is the conclusion that the individual reader's purposes guide the way reading occurs, and that purposes change while reading. This finding is compelling, and has been so at least for some since Edmund Huey's *Psychology and Pedagogy of Reading* (New York: Macmillan Co., 1908; reprint ed., Cambridge, Mass.: M.I.T. Press, 1968).

The reasoning behind Gibson and Levin's decision to focus on introspection and their conclusions about purpose is interesting, but less compelling than the conclusions themselves. They purport to review models of reading, though this is a task previously done better and more exhaustively in *The Literature of Research in Reading with Emphasis on Models*, edited by Frederick Davis (Washington, D.C.: Department of H.E.W. project no. 0-9030, 1971) and in *Theoretical Models and Processes of Reading,* edited by Harry Singer and Robert Ruddell (Newark, Del.: International Reading Association, 1970). Gibson and Levin divide models of reading into information processing models and analysis-by-synthesis models. As an example of an information processing model, they cite Jane Mackworth, "Some Models of the Reading Process: Learners and Skilled Readers" (in *The Literature of Research on Reading* [cited above], pp. 67–100). As an example of an analysis-by-synthesis model, they cite Kenneth Goodman's work in its earliest prerevised form (Kenneth Goodman, "Reading: A Psycholinguistic Guessing Game," *Journal of the Reading Specialist* [May 1967]). However, they then summarily reject models approaches, stating, "There is no single reading process" and therefore ". . . there can be no single model of reading" (p. 438).

To espouse the concept of no single reading process or model of reading is another way of saying that people try to make sense out of printed language in a variety of ways to suit many different purposes. However, one wonders if it also precludes the possibility of arriving at a metamodel or model that encompasses many alternative ways of making sense out of print. Are Gibson and Levin rejecting the possibility of ever pointing to a class of human endeavors that involve making sense out of conventional printed language? In short, if Gibson and Levin are correct, can we ever use the term "reading" in a meaningful way? They might have avoided taking the chance of committing such an undignified error by reading Max Black's "Models and Archetypes" in *Models and Metaphors* (Ithaca, N.Y.: Cornell University Press, 1962, pp. 219–43).

Following their rejection of models, Gibson and Levin provide a section on principles and a list of strategies based on a fascinating and insightful analysis of introspective reports by readers. The section analyzing the introspective reports is reason in itself for paying over eighteen dollars for the book. Part 3 of the book is a weak chapter on answering questions that I suppose they suppose everybody wants to know about reading.

Anyone seriously interested in reading, learning to read, and reading instruction should obtain this book and read it. Its strong points include the reviews in the first 11 chapters and the analysis of purposes for reading based on introspective accounts of readers. Its weak points include the mishandling of models of reading and the tacked-on attempt, embodied in the answers to selected questions in part 3, to bow to those who think theory is not practical. The book itself is generally well done, has some excellent parts, and represents a sincere, major effort on the part of two greatly respected scholars.

William D. Page, *University of Chicago*

Guide to the Research Collections of the New York Public Library. Compiled by SAM P. WILLIAMS under the direction of WILLIAM VERNON JACKSON and JAMES W. HENDERSON. Chicago: American Library Association, 1975. Pp. xxxi + 336. $35.00. ISBN 0-8389-0125-5.

Nowhere does American librarianship—from the grass-roots level to the heights of specialization—appear to greater advantage than in the reports and other publications of the New York Public Library, with their evidence of dedicated scholarship, bibliophilism, impartial zeal in service to a broad public, and the enlightened liberality of generous citizens. It is fitting that this new guide should appear as a publication of the American Library Association: all American librarians can rejoice and take pride in the collections described in this book, which comprise what is perhaps the most unprovincial library in the whole world.

Because of the quality and the size of the collections even a very modest handbook would have been welcomed by students and other users of the library, but the task was conceived in much larger terms. Beginning in 1965, with foundation support and with the great advantage of the pioneer guide by Karl Brown (*A Guide to the Reference Collections of the New York Public Library* [New York: New York Public Library, 1941]), the editors proceeded to write a consistent, balanced survey of a collection that had doubled in size since the publication of that earlier work. The result is a book no bulkier than Brown's that is designed to replace it "except for special features" (p. xxiii).

The most noticeable departure from Brown's model—adding greatly to the general usefulness of the new guide—is in organization. The decision in 1956 to shelve a large amount of incoming material by size made it advisable to adopt for this book a subject arrangement unrelated to local practices in classification and shelving. The new book accordingly ignores the Billings classification and presents its material in a systematic arrangement devised for the purpose, with an analytical table of contents and an alphabetical "Index to Subjects and Collections." A location chart of the relevant library units appears on pages 304–5.

In Section I are described the reference tools, the general periodicals, and the special collections that transcend subject limits: the Jewish division, the Oriental division, and the like. Section II is devoted to the humanities, Section III to the social sciences, and Section IV to the pure and applied sciences. In addition to Henderson's preface, the volume contains a 3-page "Guide to the Use of This Volume," with definitions and explanations of terms and abbreviations and an introduction by William Vernon Jackson, which provides a clear account of the method of compilation.

This was as follows: published descriptions of library holdings and subject entries from the library catalog were combined in a "Resources File"; other relevant library documents were brought together; counts or estimates were made of holdings in the different subjects; and a description was prepared for each unit or division, with an indication of its responsibilities, its special files and indexes, and other details affecting its work. Then for each subject specialty a nine-stage routine was followed in order to bring together all resources from the various parts of the organization and to define current acquisition policy. The final step was the writing of the text of the guide, covering holdings, acquisition policy, reference materials, serials, and coverage of subtopics within the broad field. The guide extends through 1969, and a supplement for January–June 1970 appeared in 1971 in the *Bulletin of the New York Public Library,* with the expectation that other supplements would follow.

The method of presentation is exemplified in the section devoted to "Linguistics" (pp. 120–23): first a note on "Collecting Policy," then a "Historical Survey" going back to 1851 and a description of "Resources." The subsections are "Periodicals,"

"International Languages," "African Languages," "Oceanic Languages," "American Indian Languages," "Balto-Slavic Languages," "Hebrew and Yiddish Languages," "Oriental Languages," and finally a section on "Noah Webster," covering not only early dictionaries and schoolbooks but also diaries, personal and business papers, lexicographical materials, and correspondence to be found in various parts of the collection. In the description of the collecting policy the statement is made that "currently the Research Libraries have at least a specimen of almost every written language. Minor languages have always been the New York Public Library's special domain" (p. 120). For Greek and the languages using the Roman alphabet, collecting is described as "comprehensive" (at least 75 percent of what is obtainable) except for pedagogical works, which are collected "on a selective basis" (any amount up to 50 percent of what is obtainable); some minor Romance languages are collected "on a representative basis" (from 50 to 75 percent of what is obtainable); most Oriental languages are collected comprehensively, but enumerated exceptions are collected "representatively."

It was the frugal Emerson who pointed out that man is by nature expensive and needs to be rich. It is hard to see how any citizen of New York who examines this record can escape a fresh thrill of ownership. Even a superficial handling of the volume gives a bird's-eye view of a large body of recorded knowledge, and a more thorough examination provides material for an education. In American literature are described special resources on Irving, Cooper, Bryant, Emerson, Hawthorne, Poe, Thoreau, Whitman, Melville, Mark Twain, Markham, Edwin Arlington Robinson, Mencken, and Carl Van Vechten, with briefer notes on other writers. In the section on the social sciences attention is called to the collections on utopian and ideal communities (Brook Farm, the Oneida Community, and so on), the Freemasons, and sports and games, and to pictorial resources and paper money related to World War I, including a series of Reichsbank notes from 1913 and "notes issued by almost every local governing body in Germany during the rapid post-war decline of the mark" (p. 219). Government publications, maps, genealogy, biography, and portraits all fall into this division. Patents, trademarks, cookbooks, and the Arents Tobacco Collection are among the materials enumerated in the pure and applied sciences.

Though not a catalog, the book gives an amazing amount of detail and footnotes guide the reader to additional references and descriptive accounts. A list of the "Published Catalogs of the Research Libraries' Collections" appears on pages 303–4. Of particular interest are the notes on special files: in the Theatre Collection, "Play Statistics" and a "Cinema Credits File"; in the Science and Technology Research Center, a "Clock-and-Watchmakers File" and a "Ships Index"; and many more. Index references include "Cards, playing"; "Etiquette, manuals"; "Fifth Avenue Hotel, menus"; "Forgeries, literary"; "Gandhi, M., collection and letters"; "Gaucho, literature on"; "Haydn, F. J., manuscripts"; "Neinken gift (peep show prints)"; "Pléiade poetry"; "Primers"; "Puppetry"; "Santa Claus, original Nast drawing"; "Slave trade, . . . ships' logs"; "Sundials"; "Transfers, transportation"; "Trolley, electric"; and "Yellow back novels." No attic could rival this exhibition as an attraction for the curious; and this repository (unlike most attics) is organized according to methods that librarians elsewhere can apply in surveying their own resources.

In an amiable gesture the new guide is "dedicated to the memory of Karl Brown" in tribute to the solitary compiler of the earlier guide, hailed in its day as a "landmark" and still so valuable after thirty-five years that librarians will do well to keep it beside this new one. Brown's index includes titles as well as topics and offers details that are not included in the index to the new volume. "Boston Committee of Correspondence papers" is the single index entry in the new guide for *Boston*; Brown, under "Boston," offers separate references for "concert programmes: Allen gift," "municipal

documents," "*Municipal register,*" "newspapers," and "theatres: collections of programmes." With its revelations concerning the local classification scheme and with Wyllis E. Wright's essay on the history of the catalogs, Brown's guide retains a homespun charm and a local color that could not be carried over into the more impersonal new guide. For most purposes, however, the new book—more "professionally" produced—effectively replaces Brown.

Seventy years have gone by since the expatriate New Yorker Henry James rhapsodized over "the power of the most extravagant of cities, rejoicing, as with the voice of the morning, in its might, its fortune, its unsurpassable conditions." This excellent book, coming at a hard time for American cities, is a heartening reminder of a cultural vitality that seems indestructible.

Robert W. Wadsworth, *University of Chicago*

Language-Operational-Gestalt Awareness: A Radically Empirical and Pragmatical Phenomenology of the Processes and Systems of Library Experience. By EUGENE E. GRAZIANO. Tempe, Ariz.: Association for Library Automation Research Communications, 1975. Pp. xviii + 457. $37.00. ISBN 0-88257-102-8.

The author claims for his book that it is "gestalt formatted" (p. xiv). That led me to expect an organized or structured form, and I was severely disappointed. The "destructured elements" of the book did not "spontaneously fall together for each person who will have read the entire work" (p. xiv), as the author hoped. Librarians who have or want to attract a clientele with a background similar to the author's (other librarians who manage an empty storefront library) or who may want a token of what the author calls "outrages of style" (p. xiv) to provoke or stimulate readers, might consider acquiring this book. As one of the "people who reads books" (p. xv) for whom this book is supposedly written, I consider it a waste of time to try either reading or "experiencing" it.

The author expects the reader not only to experience the book but to learn to behave according to his views about "language-operational-gestalt awareness," just to understand it. He asks the reader to understand a tortuous sentence not by trying to straighten it out so that it conforms with the reader's syntactical habits, but to straighten out his habits to conform with the syntax of the sentence. He does not even conform to conventional spelling rules. I fail to see the merit of "stylastic" in place of stylistic, "preciseness" for precision, or "pragmatical" for pragmatic. It is not his nonconformity that is outrageous, but his pretense that such nonconformity betokens underlying treasure worth thirty-seven dollars.

One should not criticize a "gestalt book" by exhibiting specific instances from the book that support evaluative judgments. To judge the whole with any fairness requires being able to perceive the whole. An art critic cannot judge, with any objectivity, a gestalt consisting of an array of randomly distributed dots or words. Comparing the book with that is an exaggeration, but it serves to make the point that, among gestalts, this book is probably not an object of value.

My experience in creating and evaluating gestalts is limited mainly to the graphic arts and mathematics. Mathematics and art share a common concern with form. A form, pattern, structured whole, or gestalt is valuable to the extent that it assists perception and helps us to enrich our internal image of a part of our world. Such an image helps us to recognize and cope with an increasing variety of problems (traps and opportunities) that we may encounter. That is my view. The author would force me to judge forms by his view, that "only what is experienced in the here-and-now has reality, or meaning, or use" (p. 1). I cannot accept that assumption, because I believe that our preparedness for future action, or our ability to imagine and anticipate future states of the world, are also real, meaningful, and useful.

If I had to accept his assumptions, adopt his views, and evaluate the gestalt of his book within these constraints, I would still consider it a failure for the following reasons: (1) the here-and-now experience of reading the book is one of tedium and boredom; (2) the lack of organization and discipline in the book is an imposition on my freedom; (3) the means employed by the author are directly opposed to his ends of freeing me from the tyranny of language (in order to attain this last end I would have to accept a tyranny of assumptions, world views, forms of permissiveness and lawlessness masquerading as liberating forces that are far less acceptable to me than the "tyranny of language and language-connected habits" [p. xvi]); (4) the book is so disjointed that the connection to library experience is, at best, a minor afterthought.

Of the 54 "chapters," only 18 relate to libraries. Speculations about library economics, sociology, and education start about halfway through the book. Reference and acquisition are viewed as games, while "circulation services" are simply viewed as a phenomenon on page 399, as is "Library Automation" on page 433. The idea expressed in the title is, however, one of considerable promise, and the author sprinkles throughout the book occasional insights and questions that may stimulate information and library scientists. In the 450 pages of dense prose (no diagrams, tables, figures, equations) there might be an occasional gem of an idea or an insight. But the reader would have to dig hard and then exert critical judgment to compare these with important works by information scientists with which the author seems to be unacquainted. His understanding and extension of ideas of Hegel, Marx, and Wittgenstein need also to be carefully and critically compared with what these writers have actually written.

In sum, the book is an experiment in communication, and readers will have to serve as experimental subjects. Because it is bold and new, it cannot be reliably judged by conventional standards. My best guess is that it will not fit the taste of either the traditional or the avant-garde reader.

Manfred Kochen, *University of Michigan*

SHORTER NOTICES[1]

Bibliography of Publications Issued by Unesco or under Its Auspices: The First Twenty-five Years, 1946 to 1971. Paris: UNESCO, 1973. Pp. xvii + 385. $9.90. ISBN 92-3-001037-5. Order from Unipub, New York.

This invaluable bibliography lists all works known to have been produced throughout the world with the assistance of UNESCO. Works included are limited to those at least 16 pages in length and which have been published by UNESCO itself or by other publishers under contract to or receiving a subsidy from UNESCO. The range of outside publications supported by UNESCO is remarkable and perhaps surprising, and the bibliography is illuminating with respect to this aspect of its work. The bibliography is intended for the use of librarians, documentalists, booksellers, officials of UNESCO national commissions, research workers, and all those who are concerned with the administration and activities of international organizations. The bibliography's arrangement is classified according to the Universal Decimal Classification (UDC), although the classified section is preceded by a section devoted to official UNESCO publications. Full cataloging information according to AACR North American text is provided for each entry, together with price in French francs, English pounds, and U.S. dollars. Headings are according to the English form as established by the Library of Congress or the *Yearbook of International Organizations*. Entries are briefly annotated, usually in English but occasionally in French. The text of the preface, introduction, and material at the end of the work is in both English and French in parallel columns. The plan of classification, arranged by UDC number, contains bilingual subject headings. The work is completed by separate, comprehensive title and author indexes, a list of abbreviations of international organizations, a brief guide to obtaining UNESCO publications, and a list of depository libraries in member states. The work is marred only by the absence of a detailed subject index that would allow one more precise and direct subject access than is possible by means of the general UDC categories provided. This work should find a place on the reference shelf of all but the smallest libraries. (W. B. R.)

The British Comic Catalogue, 1874–1974. By DENIS GIFFORD. Westport, Conn.: Greenwood Press, 1976. Pp. xiv + 210. $30.00. ISBN 0-8371-8649-8.

Gifford's catalog celebrates the centenary of the British comic; it is salutary to learn that the British preceded the Americans by a generation in the production of this phenomenon. As a self-confessed "obsessed enthusiast," Gifford believes that "every comic published is more than a commercial product; it is a work of art . . . and every comic is also an item of social history, reflecting in it, somewhere, some aspect of its

1. Authors of Shorter Notices in volume 46 (1976) have been Abraham Bookstein, Reva J. Brick, Patricia K. Clatanoff, Gordon B. Neavill, Hans E. Panofsky, W. Boyd Rayward, Peggy Sullivan, Zena Sutherland, Robert W. Wadsworth, and D. Kathryn Weintraub.

moment in time." He has tried to identify every comic printed, published, and originated in Britain; but this goal was less straightforward than it seemed, and he had to include some reprints of foreign material as well as "apparently all-British comics—which upon deeper investigation turn out to be drawn in Italy or Spain, and printed in such unlikely places as Paris, Poland, and Finland." His catalog identifies 1,900 titles; he appeals to his reader to remedy omissions by sending him details—or the delinquent comics themselves. The catalog is meticulously compiled in an alphabetic arrangement by title, but, because "official titles of comics often become extremely tortuous due to complex amalgamations," cross-references are used as necessary. Inclusive dates of publication are given where known; otherwise dating reflects the compiler's doubt, and only the year or the decade appears. Where the number of issues published can be ascertained, this is given, along with details concerning publishers and distributors, when these are different; variations in price, size, and number of pages over a period are noted, as are changes in color-printing practice. Depositories where the comics have been preserved are also noted (it is a matter of some regret that the British Library's holdings were so incomplete). As well as a general description of titles and any free gifts accompanying them, details of incorporation (for "a comic seldom dies") are provided. Interesting additional information concerns characters, who are listed according to their first appearance in a series; the artists' names, when known, are set in italics below the descriptive paragraph opposite characters' names.

This work is remarkable in its thoroughness and comprehensiveness of detail and is of great seriousness; it is also wonderfully entertaining to browse in. Its brief introduction, which deals with the history and vicissitudes of British comics ("Australian reprints of American comics were imported into Great Britain, and so popular were they, that from 1950 they were actually reprinted in England"—but these are not included in the catalog), is fascinating. The student of popular culture, the social anthropologist, and the comic aficionado will all wish to own this delightful work, and all will hope for the speedy appearance of an American equivalent to complement it. *Pace* Frederic Wertham and *The Seduction of the Innocent* (New York: Rinehart, 1954). (W. B. R.)

Cataloging and Classification: A Workbook. By MARTHA L. MANHEIMER. Books in Library and Information Science, vol. 12. New York: Marcel Dekker, 1975. Pp. vii + 141. $6.50 (paper). ISBN 0-8247-6108-1.

This workbook offers examples and exercises with an answer key that could be used either as a part of an introductory course in cataloging or as part of a program for independent study. It illustrates current practice in the areas of descriptive cataloging, choice and form of headings, Library of Congress and Dewey Decimal classification symbols, and Library of Congress subject headings. The examples will prove useful to beginning students. There are very few examples which an experienced cataloger might question, and there are no problems that would prove challenging for advanced students. The examples of descriptive cataloging illustrate the new chapter 6 of the Anglo-American cataloging rules (AACR) and should prove useful for that reason. There are two questions concerning these examples. Example 21 shows the number of plates in the collation for a 3-volume publication, although the present version of chapter 6 specifies that plates are to be counted for publications in 1 volume. All of the examples on page 15–18 consistently show the copyright date as the first item in the date of publication element, although AACR 139 states that the copyright date is first when it is used in lieu of the date of the edition and last when it is given in addition to the date of the edition. The examples for choice of entry are useful, but in

doubtful cases it would be necessary to see the book in order to understand the reason for the choice of main entry. There are examples of cross-references for personal names with varying forms, but there is no indication of authority cards or any other form of control over the existence of these cross-references. The many examples for form of entry also introduce the student to the real world of printed cards prepared according to varying catalog codes. The exposition of the classification systems emphasizes the use of synthetic devices, but there is no exposition of standard classification policies. Even such ordinary problems as biographies, bibliographies, geography of a subject or a work that treats of two or more topics are all ignored. However, the exercises do offer good practice in the use of "standard subdivisions," "add from tables," "add from schedules," double cutter numbers, successive cutter numbers, and Library of Congress floating tables. There is also an outline for what should prove an interesting lecture on subject headings and one subject-heading exercise.

This book will prove useful during the interim before more extensive collections of examples for the new cataloging code are available, and perhaps, in subsequent editions when the minor problems it now contains have been more carefully worked out, the text will remain as an extremely valuable workbook for a one-semester beginning course. (D. K. W.)

A Catalogue of the Tract Collection of Saint David's University College, Lampeter. London: Mansell Information/Publishing, 1975. Pp. xix+316. $54.00. ISBN 0-7201-0538-2. Distributed in North America by International Scholarly Book Services, Beaverton, Oregon.

The Tract Collection of Saint David's University College, Lampeter, Wales, is "a largely unknown archive of what was surely the great age of pamphlet-writing in English" (p. vii). The collection consists of 828 volumes containing 11,395 separate pieces. Excluding duplicates and parts of serials, the whole is cataloged in 8,690 entries. The range of dates of pamphlets and serials in the collection is from ca. 1520 to 1843; three-fourths of these, however, are dated between 1641 and 1719. "Even within these eighty years there is a shorter period extending from 1679 to 1719 which is the real core of the Collection. There is a remarkably rich concentration in the years 1709–13, with as many as 2,015 pieces (1,295 catalogue entries), probably representing a substantial proportion of the output of pamphlets in England during those years" (p. xiii). The collection is essentially that collected by the Bowdler family for over a century and a half, with minor additions. Thomas Bowdler II (1661–1738), although not the founding collector, was the major collector in the family; and it was Dr. Thomas Bowdler (1754–1825), editor of the *Family Shakespeare*, who donated the collection to Saint David's University College. "The subject range of Thomas Bowdler II's collecting during his most active years was wide; his pamphlets are representative of English publishing of the time, comprising everything from serious religious work to scurrilous and indeed bawdy satirical verse . . . . But, above all, he was interested in those crucial areas of controversy which hinged upon the vital theme of the relationship between Church and State, religion and politics, from the years of the Popish Plot and the Exclusion Crisis, through the reign of James II and the Revolution, and into the era of the Non-jurors" (p. xv). Although Bowdler's sympathies lay with the High Church Tories, he collected the opposing publications of Catholics, Low Churchmen, and Dissenters. The writer most voluminously represented in the collection is the Dissenter Daniel Defoe. Other authors range from such figures as Milton, Dryden, Locke, Swift, and Pope to innumerable, almost-forgotten controversialists and to Grub Street hacks such as Ned Ward and Tom Brown.

The catalog, which has been reproduced from a card index of the Tract Collection

compiled in 1972–74, is arranged chronologically. Entry is made under author's name where this can be established to a reasonable degree of certainty; where attribution is uncertain or disputed, entry is made under title, often followed by a statement of attribution in brackets. A 28-page index consists of authors' names, titles of anonymous works, and the names of persons and the titles of anonymous pamphlets referred to or written against. An imposition error has muddled the order of the first few pages of the index, but it is complete. Mansell Information/Publishing has announced that, providing the demand reaches a certain minimal level, microfiche of individual items in the Tract Collection will be made available and invites inquiries. (G. B. N.)

Censorship in Public Libraries in the United Kingdom during the Twentieth Century. By ANTHONY HUGH THOMPSON. London: Bowker Publishing Co., 1975. Pp. xiv+236. $15.95. ISBN 0-85935-019-3. Available in the Western Hemisphere from R. R. Bowker Co., New York.

Except for an initial 10-page chapter devoted to the years 1900–1939, this heavily documented survey is concerned largely with censorship in public libraries in the United Kingdom from 1940 to 1974. Three of the chapters are topical. These deal with the reaction against P. G. Wodehouse and his books following a series of humorous, nonpolitical broadcasts which Wodehouse gave for German radio in 1941 while interned in Germany as an enemy alien; the once common but now nearly extinct practice of librarians' blacking out racing news in reading-room newspapers; and the dilemmas faced by librarians in respect to the enormously popular children's books of Enid Blyton, the purchase of which many librarians have felt unable to justify on grounds of quality and yet which are in constant demand. The rest of the chapters report incidences of censorship chronologically. For evidence, Thompson has scoured with great diligence not only British library periodicals but also a long list of local and national newspapers. Revealing, perhaps, the work's origins as a master's thesis, his pages typically consist of long block quotes of documentation separated often by only a line or two of text. Most of the examples of censorship which Thompson reports seem to have occurred in smaller communities and the provincial cities rather than in London, but it is not clear whether this reflects greater tolerance in the metropolis or limitations of space and the author's desire to cast his net as widely as possible. A thorough index is divided into four parts: subjects, titles, persons, and places. (G. B. N.)

Educational Media Yearbook, 1975–1976. Edited by JAMES W. BROWN. New York: R. R. Bowker Co., 1975. Pp. xi+559. $21.95. ISBN 0-8352-0834-6.

This third edition of Brown's compendium of directory information, brief articles, and updates on some continuing issues is described by its publisher as a "one-stop source for reports, studies, and statistics covering every aspect of the expanding educational media field." Brown sees media in relation to libraries as well as in relation to more traditional audiovisual programs, and he incorporates materials about library-education programs, information-science-education programs, and other areas of general interest. Some articles appear to be prepared on a continuing basis, such as Lida M. Cochran's annual report on the Okoboji Conference and Gary T. Peterson's review of manpower in the media field. The work of educational associations related to media is tersely but effectively documented, and some significant projects are presented in short articles. An especially useful feature is "Bibliography of Media about

Media." In a handy, desk-sized format, this handbook should appeal to many educators and others who want ready access to current information. Acquisition of this edition should not lead to automatic withdrawal of the earlier editions, which would still serve some useful purposes. (P. S.)

A Glossary of Indexing Terms. By BRIAN BUCHANAN. Hamden, Conn.: Linnet Books; London: Clive Bingley, 1976. Pp. 144. $9.00. ISBN 0-208-01377-6.

The ca. 1,000 terms defined in this dictionary are largely from the field of indexing. Some terms from the field of descriptive cataloging are also included, but it is difficult to ascertain why some are included and not others. For example, such terms as "issue," "uniform title," and "International Standard Book Number" are included, but such terms as "printing," "conventional name," and "International Standard Bibliographic Description" are not included. Those terms that are included usually refer to manual or off-line mechanized systems. The terms referring to automated applications are barely adequate to distinguish clearly between an on-line and a batch-processing search. Proper names are excluded "unless the tool provides a convenient example of a generally applicable indexing system (. . . *British Technology Index*) or the name has lost the force of a proper name (. . . PRECIS) . . ." (p. 8). Thus, the term "Thesaurofacet" and terms related to this kind of system such as "broader term reference" or "narrower term reference" are all excluded, despite the fact that there are other indexing systems that exemplify the same practices as those of Thesaurofacet. The definitions are written in clear, concise English and, we are told, "reflect the author's usage" (p. 7). Thus many of the definitions, although clear and correct, do not reflect the usage that could be found in other standard sources. The definition of the term "serial" does not use the same wording as the definition found in the glossary of the Anglo-American cataloging rules. Similarly, the definition of the term "relative index" does not use wording that is comparable to the definition found in the glossary of the eighteenth edition of the Dewey Decimal Classification. The definition of "serendipity," however, is quoted from Horace Walpole. The see reference equating "cataloguing in source" with "cataloguing in publication" is surely inadequate, if not inaccurate. As is commonly the case with reference works, this dictionary is useful for the information it gives, but it will not prove adequate for all purposes. (D. K. W.)

Handbook of Special Librarianship and Information Work. Edited by W. E. BATTEN. 4th ed. London: Aslib, 1975. Pp. vii+430. £11.00 (cloth), ISBN 0-85142-073-7; £9.00 (paper), ISBN 0-85142-074-5.

Those who awaited publication of a fourth edition of this work are likely to be disappointed. As the preface states, it "retains all of the essential philosophy associated historically with the manual era [while making] more frequent reference to the ways in which the new technologies can assist application of sound principles" (p. v). Unfortunately, an apt introduction to the mixed bag which follows. Previous editions have been commended for double duty as handbooks and as anthologies providing fine surveys of a range of topics. The dichotomy, however, does serious disservice to the work's usefulness as a manual. It is too cumbersome to serve well for quick reference, and the plan of the work does not present the series of topics in a coherent arrangement. Chapter 2, "Planning Library and Information Services," by L. J. Anthony, devotes 8 pages to user studies and other means of determining what services are needed and then 51 pages to physical layout. A new label, "Management," is

affixed to the old topic of administration, but the chapter is still relegated to last place, and it only provides 18 references for what certainly represents the key to special-library survival. The middle chapters exhibit the same mixed outlook as well as the same poor arrangement. Chapter 9, on "Subject Inquiries and Literature Searching," might better appear immediately following chapter 7, "Indexing for Retrieval"; and chapters 8, "Circulation, Loan and Inter-Library Loan," and 10, "Publications of the Library and Information Department," belong apart from those devoted to methods of subject access. A better arrangement might also reduce the amount of duplication of material in chapters on related topics. Chapters on "Technical Report Literature" and "Chemical Structure Retrieval" will have limited utility to special librarians in nonscientific fields. A drawback for American librarians is the *Handbook*'s primarily British outlook. While it retains from earlier editions such positive features as extensive bibliographies, a rationale for the appearance of a fourth edition of the *Handbook* is difficult to provide, since none of the criticisms of the third edition seems to have been remedied. It is to be hoped that the next edition will be thoroughly replanned. (R. J. B.)

Map Librarianship: Readings. Compiled by ROMAN DRAZNIOWSKY. Metuchen, N.J.: Scarecrow Press, 1975. Pp. vii + 548. $20.00. ISBN 0-8108-0739-4.

This collection, the compiler of which is map curator of the American Geographical Society and lecturer in map librarianship at the Columbia University School of Library Service, contains 48 articles reprinted from a wide variety of sources. The book is organized into seven parts: "Introduction to Maps," "The Elements of Maps," "Map Classification and Use," "Map Bibliographies/Acquisitions," "Map Processing and Cataloging," "Map Storage and Preservation," and "Map Librarianship/Map Collections." There is an 18-page bibliography, organized according to the seven parts of the text, and an index. (G. B. N.)

Paperback Parnassus: The Birth, the Development, the Pending Crisis of the Modern American Paperbound Book. By ROGER H. SMITH. Boulder, Colo.: Westview Press, 1976. Pp. vii + 111. $12.75. ISBN 0-89158-007-7.

This is based on Smith's series of four articles, "Getting Paperbacks to Their Readers," which appeared in *Publishers Weekly* in March and April 1975. The subject of the articles was the distribution of mass-market paperbacks, and this remains the central focus of the book. Smith provides very useful descriptions of the operations of locally owned independent wholesalers (whose trucks supply magazines and mass-market paperbacks to outlets throughout the fixed geographical area which most of the wholesalers serve on an exclusive-franchise basis) and of the system which supplies the wholesalers on a generally inflated suggested-allocation or forced-feeding basis, leading to the staggering returns that plague the industry. Sections of the book which touch on other matters, such as trade paperbacks or the history of paperbacks in America, are superficial and appear to be rather hurriedly concocted padding. Smith's original articles were outstanding; his book, on the whole, is disappointing and adds little of substance to them. This is unfortunate. It would be hard to underestimate the significance or influence of the twentieth-century paperback revolution. And yet, apart from Frank Schick's outdated *Paperbound Book in America* (New York: R. R. Bowker Co., 1958) and now Smith's flawed work, the subject has attracted a remarkable lack of attention. (G. B. N.)

BOOKS RECEIVED

Access to the Literature of the Social Sciences and Humanities: Proceedings of the Conference on Access to Knowledge and Information in the Social Sciences and Humanities, New York City, April 5–6, 1972. By the LIBRARY SCIENCE DEPARTMENT, QUEENS COLLEGE, CITY UNIVERSITY OF NEW YORK. Flushing, N.Y.: Queens College Press, 1974. Pp. 199. $12.50 (paper).

American and British Genealogy and Heraldry: A Selected List of Books. Compiled by P. WILLIAM FILBY. 2d ed. Chicago: American Library Association, 1975. Pp. xxi+467. $25.00. ISBN 0-8389-0203-0.

Anatomy of an International Year: Book Year, 1972. Reports and Papers on Mass Communication, no. 71. Paris: UNESCO, 1974. Pp. 37. $2.00 (paper). ISBN 92-3-101186-3. Order from Unipub, New York.

Applying the Goals of Student Financial Aid. By JONATHAN D. FIFE. ERIC/Higher Education Research Report, no. 10 (1975). Washington, D.C.: American Association for Higher Education, 1975. Pp. 67. $3.00 (paper).

The Assessment and Development of Professionals: Theory and Practice. Edited by PRESTON P. LEBRETON. Seattle: University of Washington, 1976. Pp. 339. $10.00 (paper). Order from BA Faculty Publications, DJ-10, Graduate School of Business Administration, University of Washington, Seattle.

Australian MARC Specification. 2d ed. Canberra: National Library of Australia, 1975. Pp. 83. $A2.50 (paper). ISBN 0-642-99040-9.

Automatic Aids to Profile Construction: Expansion of Search Terms by Thesaurus. By LYNN EVANS and ANGELA M. GOULD. Report no. R76/25. London: Institution of Electrical Engineers, 1976. Pp. vii+105. $7.50 (paper). ISBN 0-85296-433-1.

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Baudelaire to Beckett: A Century of French Art and Literature. A Catalogue of Books, Manuscripts, and Related Material Drawn from the Collections of the Humanities Research Center. Selected and described by CARLTON LAKE. Austin: Humanities Research Center, University of Texas at Austin, 1976. Pp. 205. $20.00 (cloth); $10.00 (paper).

The Best of the Best/Die Besten der Besten: Picture, Children's, and Youth Books from 110 Countries or Languages. Edited by WALTER SCHERF. 2d enl. ed. Catalogs of the International Youth Library, no. 3. München: Verlag Dokumentation, 1976. Pp. 344. $14.50. ISBN 3-7940-3253-5. In German and English. Distributed in the Western Hemisphere by R. R. Bowker Co., New York.

A Bibliography of 17th Century German Imprints in Denmark and the Duchies of Schleswig-Holstein. Vol. 3: *Additions and Corrections.* By P.M. MITCHELL. University of Kansas Publications, Library Services, no. 39. Lawrence: University of Kansas Libraries, 1976. Pp. xi+110. $6.00 (paper).

Biblioteksbetjening af aeldreinstitutioner biblioteket kommer [Provision of library service for institutions for the aged/library service to the housebound]. Copenhagen: Biblioteks-centralen, 1975. Pp. 41. (Paper.) ISBN 87-87012-00-6.

Biennale of Illustrations Bratislava '71, '73. Boston: Horn Book, Inc., 1975. Pp. 281. $15.00. ISBN 0-87675-277-6.

Black Separatism: A Bibliography. By BETTY LANIER JENKINS and SUSAN PHILLIS. Westport, Conn.: Greenwood Press, 1976. Pp. xxv + 163. $11.00. ISBN 0-8371-8378-2.

Blacks in Minnesota: A Preliminary Guide to Historical Sources. Compiled by DAVID VASSAR TAYLOR. St. Paul: Minnesota Historical Society, 1976. Pp. 33. $1.75 (paper). ISBN 0-87351-101-8.

Book Development in National Communications and Planning. By ROMESH THAPAR. Karachi: UNESCO Regional Centre for Book Development in Asia, 1975. Pp. vi + 113. (Paper.)

Bureau national de l'information scientifique et technique: Rapport annuel d'activité 1974. Paris: BNIST, n.d. Pp. 55. (Paper.)

Burning Issues: Papers Read at the Week-end Conference of the London and Home Counties Branch of the Library Association, Held at Eastbourne, 18th–20th April 1975, under the Chairmanship of T. D. F. Barnard. Edited by VAUGHAN WHIBLEY Orpington, Kent: Library Association, London and Home Counties Branch, 1975. Pp. 61. £1.50 (paper). ISBN 0-902119-15-X. Publisher's address: 14 Chestnut Close, Green Street Green, Orpington, Kent BR6 6LP, England.

Cannons' Bibliography of Library Economy, 1876–1920: An Author Index with Citations. Edited by ANNE HARWELL JORDAN and MELBOURNE JORDAN. Metuchen, N.J.: Scarecrow Press, 1976. Pp. viii + 473. $18.50. ISBN 0-8108-0918-4.

Certification Model for Professional School Media Personnel. By the CERTIFICATION OF SCHOOL MEDIA SPECIALISTS COMMITTEE, AMERICAN ASSOCIATION OF SCHOOL LIBRARIANS. Chicago: American Library Association, 1976. Pp. viii + 32. $2.00 (paper). ISBN 0-8389-3179-0.

Children's Books of the Year 1975. By the CHILDREN'S BOOK COMMITTEE, CHILD STUDY ASSOCIATION OF AMERICA/WEL-MET, INC. New York: Child Study Press, 1976. Pp. 52. $2.50 (paper). ISBN 0-87183-177-5.

Children's Reading in America 1776: A Selection of Titles. Compiled by VIRGINIA HAVILAND. Washington, D.C.: Library of Congress, 1976. Pp. 14. (Paper.) Single copies available without charge from Publications Distribution Unit, Central Services Division, Library of Congress.

Chronology of World History: A Calendar of Principal Events from 3000 B.C. to A.D. 1973. By G. S. P. FREEMAN-GRENVILLE. Totowa, N.J.: Rowman & Littlefield, 1976. Pp. 752. $40.00. ISBN 0-87471-765-5.

Computers and Early Books: Report of the LOC Project Investigating Means of Compiling a Machine-readable Union Catalogue of Pre-1801 Books in Oxford, Cambridge and the British Museum. London: Mansell, 1974. Pp. vii + 131. ISBN 0-7201-0440-0. Available from International Scholarly Book Services, Beaverton, Ore.

Conference Publications Guide: 1974. Edited by GERALD L. SWANSON. Computext Book Guides. Boston: G. K. Hall & Co., 1974. Pp. xii + 712. $65.00 (U.S.); $71.50 (elsewhere). ISBN 0-8161-6801-6.

Consolidated Catalog of League of Nations Publications Offered for Sale. By MARY EVA BIRCHFIELD. Dobbs Ferry, N.Y.: Oceana Publications, Inc., 1976. Pp. ix + 477. $50.00. ISBN 0-379-00328-7.

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